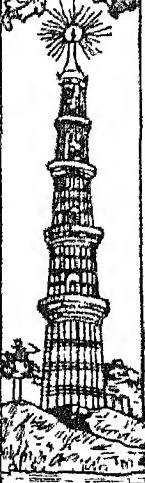


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INDIAN AGRICULTURAL ECONOMICS

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INDIAN AGRICULTURAL ECONOMICS

BY
AMBALAL D. PATEL, M.A.

FOREWORD
BY
SIR T. VIJAYARAGHAVACHARYA, K. B. E.

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FOREWORD

I have been asked to write a foreword to the thesis which Mr. A. D. Patel has submitted for his M. A. degree and which he proposes to publish. I gladly do so because Mr. Patel himself comes from an old agricultural family in Gujarat and it is desirable that members of such families who have had the advantage of an education on modern lines should be encouraged to think about problems affecting the welfare of the countryside. Too often these are absorbed by what are called the "learned professions" and their intelligence and knowledge are lost to the industry which contributed to the cost of their education. If the prevalent curse of "educated unemployment" will tempt young men from our Universities to study agricultural problems at first hand, it might be a mitigating feature of that distressful condition.

Gujarat is a part of India whose agricultural conditions interest many people outside Gujarat. The industry and skill with which the patidar caste of Gujarat cultivate their lands and their methods of land management have brought them a well deserved reputation, and agriculturists elsewhere in India stand to profit by studying them. From this point of view I should have liked Mr. Patel to have left learned authorities alone and attempted a detailed first-hand account of the art of agriculture as practised in Gujarat. I quite understand however that a young man's modesty may have forbidden him from venturing to stand on his own feet. Next time Mr. Patel writes a book, I should like him to cast authorities aside and give us more from his own personal knowledge

FOREWORD

and study of local conditions. He belongs to an agricultural family himself and with a little trouble he should be able to persuade his fellow-agriculturists out of the attitude of suspicion and distrust which "outsiders" starting on village inquiries meet with. A book based solely on his own talks and observations would make very interesting reading.

This is not to say however that I do not recognise the trouble which Mr. Patel has taken with his present thesis. Obviously he has attempted to get to grips with the actual facts of rural life. I like particularly his detailed study of indebtedness by families. It is a good idea to deal with the taluk or tahsil (mamlatdar's charge) as a unit. But the foundation of such a treatment must necessarily rest in the village.

Calcutta, 1937.

T. VIJAYARAGHAVA VACHARYA.

PREFACE

Some time has elapsed since this thesis was completed, and during that interval several important changes have taken place, which are likely to have far reaching effects on the rural population. The world-wide depression, which was prevailing at the time when this thesis was in preparation has passed, and the prices of Agricultural products are steadily rising. The inauguration of the Government of India Act of 1935, has changed the political and economic outlook of the Government, especially since the Congress has decided to accept Offices. The Indian peasants now hope with some confidence for happy solution of their difficulties. Till recent times, the Indian peasants were unable to do anything to improve their lot on account of their backwardness and doubts about Government taking any measures which would relieve their hardships. But now with the advent of rural uplift the peasants can definitely hope for better times.

The aim of the research work embodied in the present volume has been to visualise all aspects of the agricultural life in India. Although I have concentrated on a small unit, viz., Borsad Taluka, in the Bombay Presidency, a great deal of information given in this work, is applicable generally to the whole of rural India.

In preparing this book, I have been ever conscious of the constant guidance and advice of Prof. D. Ghosh, M. A. (Cantab.), Bar-at-Law, under whom I had the privilege to work as a research student in the School of Economics and Sociology, Bombay. But for his assistance, I would not have been able to put forth so complete a book. I am much obliged to him for all this.

I am also indebted to Sir T. Vijayaraghavacharya, who in spite of his numerous activities, which keep him exceedingly busy, has been kind enough to go through the type-script and write the Foreword.

My thanks are also due to my friends who have assisted me in collecting the necessary statistics in Borsad Taluka.

I acknowledge my indebtedness to the University of Bombay for the substantial financial help it has granted towards the cost of publication of this work.

17th August, 1937.
Karachi.

A. D. PATEL.

INDIAN AGRICULTURAL ECONOMICS

(With Special Reference to Borsad Taluka, Kaira District)

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BIBLIOGRAPHY (Section A.) GENERAL WORKS

No.	Author	Title of the book
1.	Anderson F. G. H.	Facts and Fallacies. 1929—about the Bombay Land Revenue System.
2.	Brij Narayan	Indian Economic Life.
3.	Brayne F. L.	Remaking of Village India.
4.	Brayne F. L.	Socrates in Indian Villages.
5.	Carver T. N.	Principles of Rural Economics. 1911.
6.	Calvert H.	The Wealth and Welfare of the Punjab. 1922.
7.	Darling M. L.	The Punjab Peasant in Prosperity and Debt. 1932.
8.	Desai G. H.	Hindu Families in Gujarat.
9.	Gregg Richard B.	Economics of Khaddar. 1928.
10.	Gorden R. G.	Bombay Survey and Settlement Manual. 1919. 2 Volumes.
11.	Gupta K. S.	Bombay Co-operative Society Act. 1925.
12.	Irvin H. D.	The Making of Rural Europe. 1923.
13.	Iyre G. S.	Some Economic Aspects of British Rule in India.
14.	Jathar and Berri	Indian Economics. 1932.
15.	Kebbel	Agricultural Labourer.
16.	Leake Martin	The Foundation of Indian Agriculture.
17.	Morrison T.	Economic Transition in India.
18.	Mukerjee R.	Rural Economy of India.
19.	Mukerjee R.	The Foundations of Indian Economics. 1916.
20.	Nehru S. S.	Caste and Credit in Rural area.
21.	O' Brien	Agricultural Economics.
22.	Patel M. C.	Land Revenue and Economics. 1925.
23.	Pillai P. P.	Economic Condition in India.
24.	Rayv S. C.	Agricultural Indebtedness in India and Its Remedies. 1915.

BIBLIOGRAPHY

No.	Author	Title of the book
25.	Sapre B. G.	Economics of Agricultural Progress. 1926.
26.	Sykes F.	Manual of Village Improvement. 1933.
27.	Tayler J. B.	Farm and Factory in China. 1928.
28.	Tayler H. C.	Agricultural Economics. 1920.
29.	Soni H. R.	Indian Industry and Its Problems. Vol. 1 & 2. 1932.
30.	Vera Anstey	Economic Development of India.
31.	Voelker J. A.	Report on the Improvement of Indian Agriculture.
32.	Talmukhi S. S.	Co-operation in India and Abroad.
33.	Talmukhi S. S.	Rural Reconstruction.
34.	Wolff H.	Co-operation in India. 1919.
35.	Wolff H.	Co-operation in Agriculture.
36.	Wadia and Joshi	Wealth of India.
37.	Yusaf Ali A.	Life and Labour in India. 1907.
	Yejiro Ono.	Industrial Transition in Japan. 1890.

(Section B.) RURAL SURVEYS

39.	Anchel Das.	Economic Survey of Tehong. 1931.
40.	Bhalla Ram Lal.	Economic Survey of Bairampur in Hoshiarpur Dist. 1922.
41.	Gilbert Slater	Some South Indian Villages. Vol. 1. 1918.
42.	Giansingh S.	Economic Survey of Gaogn.
43.	Giansingh S.	The Punjab Village Surveys. 1. Gaggar Bhama, Amritsar Dist. 1928.
44.	Iyengar S. K.	Studies in Indian Rural Economy. 1927.
45.	Jack J. C.	The Economic Life of a Bengal Dist. 1927.
46.	Kartarsingh S.	Farm Accounts in the Punjab. 1931-32.
47.	Keating G.	Agricultural Progress in Western India. 1921.
48.	Keating G.	Rural Economy in the Bombay Deccan. 1921.
49.	Kumarappa J. C.	A Survey of Matar Taluka. 1931.
50.	Mann H. H.	Land and Labour in a Deccan Village, Pimpla Soudagar. Study 1. 1917.
51.	Mann H. H.	Land and Labour in a Deccan Village, Jategoen Budruk. Study 2. 1921.
52.	Mehta J. M.	Study of Rural Economy in Gujarat. 1931.

BIBLIOGRAPHY

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No.	Author	Title of the book
53.	Mukherjee R.	Fields and Farmers in Oudh 1929.
54.	Mukhtyar G. C.	Life and Labour in a South Gujarat Village. 1980.
55.	Patil P. C.	Principles and Practice of Farm Costing with Farm Studies. 1933.
56.	Ranade V. G	A Survey of Konkan Village. 1926.
57.	Raj Narayan.	Economic Survey of Gijhi of the Punjab.
58.	Ranga N. C.	Economic Organisation of Indian Villages. Vol. 1. 1926.
59.	Ranga N. C.	Economic Organisation of Indian Villages. Vol. 2. 1929.
60.	Saha K. B.	Economics of Rural Bengal. 1930.
61.	Sankara Menon T. K.	Economic Survey of Eruttampadi Village, Cochin State. 1935.
62.	Sankara Menon T. K.	Economic Survey of Nayarambalam Village, Cochin State, 1935.
63.	Sankara Menon T. K.	Economic Survey of Antikkad Village, Cochin State, 1935.
64.	Shukla J. B.	A Rural Survey of Olpad Taluka.

(Section C.) GOVERNMENT REPORTS

- 65. Royal Commission on Agriculture in India. 1928.
- 66. Royal Commission on Agriculture in India. Evidence Volume, No. 1, Part 1, 2 and 3. Volume No. 2. Part 1 and 2. 1927.
- 67. Report of the Indian Industrial Commission. 1916-18.
- 68. Report of the Taxation Inquiry Committee. 1924-25.
- 69. Report of the Indian Central Banking Inquiry Committee. 1931.
- 70. Report of the Bombay Provincial Banking Inquiry Committee, Vol. 1 and 2 1929-30.
- 71. Report of the Baroda Banking Inquiry Committee. 1929-30.
- 72. Report of an Inquiry into Agricultural Wages in the Bombay Presidency. By Findlay Shiras. 1922.
- 73. Report of the Industrial Finance Committee, United Provinces of Agra and Oudh. 1935.
- 74. Report on the Redemption of Agricultural Indebtedness in Bhavnagar State, 1933.

75. Report of the Special Inquiry Committee into the Second Revision Settlement Manual of the Bardoli and Chorasi Talukas, 1929.
76. The New Land Revenue Policy of the Bombay Government. Taxation of Sub-soil Water at the forth-coming Revision Settlement in Gujarat. 1884.
77. Papers relating to the Revision Survey Settlement of the Borsad Taluka. 1894-4.
78. Season and Crop Reports of the Bombay Presidency. 1913 to 1934.
79. India, Moral and Material Progress. 1931, 32, 33.
80. Kaira Gazetteers. 1904, 1916 and 1926.
81. Bombay Presidency Gazetteers, Vol. 1, 2 and 3.
82. Statistical Atlas of the Bombay Presidency. 1925.

(Section D.)

AGRICULTURAL PAMPHLETS ISSUED BY THE GOVERNMENT OF BOMBAY

83. An Examination of the Seed Supply of the Broach Dist. Bulletin No. 37 of 1910.
84. Well Waters from the Trap Area of Western India. Bulletin No. 74 of 1915.
85. Improvement of the Indigenous Plough of Western India. Bulletin No. 57 of 1913.
86. Cattle Breeding in the Bombay Presidency, Principles and Progress. Bulletin No. 136 of 1927.
87. Cattle of the Bombay Presidency. Bulletin No. 26 of 1905.
88. Part 1, Composition of Important Munures. Part 2, Manurial Constituents of Important Crops in Western India. Bulletin No. 174 of 1933.
89. Soils of the Bombay Presidency. Bulletin No. 146 of 1927.
90. The Crops of the Bombay Presidency, their Geography and Statistics. Bulletin No. 146 of 1928.
91. Preliminary Studies of Important crops in the Bombay Deccan in the Post War Period. No. 168 of 1932.
92. Fodder Crops of Western India. Bulletin No. 77 of 1916.
93. Grass-land Problems in Western India. Bulletin No. 171 of 1932.

94. A List of Diseases of Economic Plants occurring in the Bombay Presidency. Bulletin No. 65 of 1914.
95. The Treatment of Patches of Inferior Tobacco, North Gujarat. Bulletin No. 129 of 1926.
96. Tobacco Cultivation in the Southern Maratha Country. Bulletin No. 140 of 1927.
97. Dates of Sowing and Harvesting Important Crops. Bulletin No. 24 of 1904.
98. Economic Value of Fruit Farming in Western India. Bulletin No. 158 of 1928.
99. A Preliminary Note on the Possibility of the Development of the Lemon Industry in Western India. Bulletin No. 158 of 1929.
100. Papaya Cultivation in the Bombay Presidency. (Excluding Sind). Bulletin No. 162 of 1930.
101. Report on the Export of Mango to Europe in 1932. Bulletin No. 170 of 1932.
102. Balanced Diets. Prepared by the Bombay Presidency Baby Health Week Association. 1935.

A complete list of books on India and Indian Subjects can be had FREE on application to D. B. Taraporewala Sons & Co.

CHAPTER I

INTRODUCTION

IMPORTANCE OF AGRICULTURE IN INDIA

India is a country of agriculturists. Her population is predominantly rural. Out of a total population of 35 crores nearly 27 crores live in about 7 lakhs villages and hamlets. Probably 90 per cent. of these are directly or indirectly connected with the land and derive their maintenance from it.

Agriculture is also the basis of a number of important Indian manufacturing industries, and 80 per cent. of Indian exports. Upon it depends largely the purchasing power of the Indian people, their capacity to buy both domestic and foreign industrial products. The finances of the Government of India depend upon successful tilling of the land. In short it is the foundation of the economic prosperity of this country.

PRESENT CONDITION OF AGRICULTURE IN INDIA

Such a basic industry has been carried on in this country for many centuries according to traditional methods. Apart from the clearing of jungles and the levelling of land for cultivation and at certain places for irrigation works, very few permanent improvements have been made on the land in India as compared with some of the progressive European countries, where a greater part of the value of land is to-day due to such improvements. The study of present position of Indian agriculture confirms the pessimism expressed by Dr. Clouston, the agricultural advisor to the Government of India in his evidence before the Royal Commission on Agriculture in India, 1926. He remarked, "In India we have our depressed classes, we have too our depressed industries; and agriculture unfortunately, is one of them".

IMPORTANCE OF RURAL STUDIES IN INDIA

Any light which may be thrown upon the condition of Indian agriculture to-day is evidently of greatest service to

the nation. The Royal Commission on Agriculture in India along with several other important authorities¹ have rightly emphasised the need for scientific research in agriculture. If we wish the land to yield us a richer harvest both in quality and quantity than at present, the agriculturists to be happy and to enjoy reasonable comforts of life and the nation to compete with the progressive countries of the world, we shall have to combat and overcome our present deficiencies.

EXISTING RURAL STUDIES IN INDIA

Students of agricultural economy in this country are grateful to eminent writers like Dr. Mann in Bombay and Mr. Calvert in the Punjab who carried out penetrating scientific research in this field. They studied intensively the economic and social life in typical Indian villages and have given us graphic pictures of the problems of the Indian peasantry.² Not only did they shed considerable light on this important section of Indian Economics but created a great interest both among the people and the state in the scientific study of these problems. Since these pioneer efforts were made in India, students of economics have taken up the work in this field with full vigour and scientific zeal.³ It may be confessed, however, that relatively to the vast extent of the country and the variety of conditions in its different parts, the literature on the subject is still inadequate. Our attempt here is to add one more study to the existing literature on the subject, and to supplement, if possible, the work done by our predecessors in the field by drawing one more picture of the economic life of rural India.

¹ A. Banking Inquiry Committee Reports of the provinces of India.

B. Evidence of Sir M. Visweswar Ray and other eminent persons before the Royal Commission on Agriculture in India.

² Dr. Mann. "Land and Labour in a Deccan Village" part 1 and 2. Mr. Calvert. "The Wealth and Welfare of the Punjab". Again it was mainly through his efforts that several village surveys of the Punjab have been made.

³ A full list of Rural Surveyors and the names of their books has been given in the "Bibliography".

UNIT OF RURAL STUDY, NOT A VILLAGE, BUT A TALUKA

A village is the smallest economic unit in the country—the taluka, the district and the province being progressively greater in magnitude. A number of studies have been made of the Indian village. These are indeed valuable additions to our knowledge of Indian rural life. But, after all, they are isolated studies touching merely the village itself; and even in India the individual village seldom stands by itself. It is an integral part of a larger rural unit made up of other villages and country towns with which it is connected by intimate ties of rural trade and commerce and that, although studies of individual villages are useful in many ways, the economic problems of the country in their entirety cannot be seen in their proper perspective unless several villages forming larger unit and a more self-sufficient whole are studied together. We have an Indian proverb saying, "Language changes at the distance of every twelve miles" implying that shades and aspects of life differ even within a small circumference of twelve miles. The fact that there exists a great deal of economic difference even between two neighbouring villages may be illustrated by reference to two villages which form part of this study. Isnav and Pimplav, the two closely situated villages in Borsad taluka, not even a quarter of a furlong away from each other, differ greatly in indebtedness though both possess the same quality of land, the same caste of farmers and an equal yield per Bigha. Again Ambali and Anklay, the other two villages of the taluka, situated at a distance of about three miles from one another differ greatly in the economic condition of their people and to a certain extent in the yield per Bigha though both have the same alluvial Goradu land.

Studies of this kind of the rural life of India are comparatively few. Excepting Dr. Mehta's "Rural Economy of Gujarat" and two taluka studies by Mr. Kumarappa¹ and Mr. Shukla,² no attempt has yet been made to widen this field of Inquiry in Bombay Presidency. Bengal has two such

¹ Survey of Matat Taluka.

² Rural survey of Olpad Taluka.

studies,¹ but they are more of generalised nature than of intensive kind. The Punjab economists have devoted their energies mainly to individual village studies, without any serious effort at co-ordinating the results. South India ranks herself with the Punjab with certain exceptions.

WHY I SELECTED THE BORSAD TALUKA?

Belonging to an agricultural family and being an inhabitant of the Borsad Taluka, I naturally preferred to carry on research work in the economics of agriculture in my taluka. The taluka also happens to be at the centre of "Charotar," a tract which is well known for its fertility.

Several studies have been made of rural conditions in Gujarat during the last decade. The well-known work "Study of Rural Economy in Gujarat" by Dr. J. M. Mehta is a consolidated work on rural problems of the whole of Gujarat. Two studies of more limited areas, the one "The Life and Labour in South Gujarat Village" by Mr. G. C. Mukhtyar and the other "Rural Survey of Olpad Taluka" by Mr. J. B. Shukla, both students of our School relate rural conditions in South Gujarat. North Gujarat differs from South Gujarat in many respects both economic and social. It is true that there is one study of North Gujarat viz. the "Survey of Matar Taluka" by Mr. J. C. Kumarappa in 1930. But Matar taluka is not within the charotar area, which according to general opinion, represents the best of agriculture in Gujarat.

In carrying on research work in rural conditions of Borsad taluka I had a great advantage in that, I am acquainted very well with the habits and conditions of the people and their temperaments. Coming from an agricultural family I could easily make the cultivators feel that I was one of them and that I deserved their help and co-operation in my work. And I am to say that I got these in full measures.

The taluka of Borsad is the most thickly populated in the whole of Kaira district. Again it is more or less a representative taluka of the main agricultural communities in the district. The most important section of community is the

¹ "The Economic Life of a Bengal District", by Mr. J. C. Jack. "Economics of Rural Bengal", by K. B. Saha.

Patidars who are both owners of land and the cultivators. The agricultural wealth of the taluka is due mainly to the labour and intelligence of the Patidar community. The community is well known for its skill in cultivation throughout Gujarat. There is another very important community known as the Dharalas who are generally tenants and live in the fields in small cottages. I have also made a special investigation into their mode of life and their methods of agriculture. I found a glaring difference between the ways and methods of two main agricultural communities and was in position to make a comparative study within limits.

METHOD OF SURVEY

We visited the taluka more than a dozen times during the course of our study. Each tour was undertaken with some purpose connected with our inquiry. We describe below, however, only the first three important tours during which we had ample opportunities to study the economic and social condition of the people from different points of view and which produced lasting impressions on our mind. The remaining tours were undertaken only for the purpose of collecting small details. We think therefore, advisable not to describe them in these pages to avoid repetition.

Of the three important tours, the first was undertaken in the month of May, 1933, the second at the end of August, 1933 and the third in January, 1934. As these three visits coincided with the three main seasons of the year, a comprehensive view of the agriculturist's year could be taken.

SUMMER TOUR

The first tour was more or less of a general nature. It was begun by the beginning of May, the hottest month of the year. Average temperature during this month at the Government dispensary at Borsad was maximum 111 F. and minimum 76 F. degrees which is not favourable for a constant touring of this kind. But the time spent was profitable to us in one way. Harvesting of Rabi Crops being over, we could easily find a group of villagers gossiping at the village

outskirts or at the village Dharamsalas (inns). It provided us with a rare opportunity to mix with the farmers to discuss various aspects of agriculture, to observe social and religious sides of their lives and to study their ways and means of maintenance.

The task, however, was not easy as we had anticipated. We had to overcome many difficulties which always accompany intensive investigation of any kind. We had to make acquaintances with the people to gain their confidence, so that they could speak their minds freely. As is natural, they always suspected us in the beginning, but realised gradually the significance of our work. No inquiries, like the present one, were instituted before, except those which are made by Government Officials once in thirty years for the revision settlement of land revenue. As the people would say, for most inquiries officers come and go and notice only the points justifying an enhancement of Revenue. With such a notion prevalent farmers did not know whether we had also come to bring fresh troubles to them, and so they suspected our motives. The taluka, during the last two or three years, had passed through the extremest type of political struggle, when a majority of the villages were deserted in accordance with the programme of Congress Campaign of Non-payment of Taxes. Hundreds of agriculturists had been to jail and had allowed their property to be confiscated. A political upheaval of such a magnitude lasting for three years, had diverted the attention of the farmers from agriculture to politics. The fear of their crops being confiscated at any moment had made them careless about the standard of cultivation. Coupled with such retrograde tendencies a progressive decline in prices of raw materials had told heavily upon their balance sheets. Villagers attributed this miserable condition to the carelessness of the existing Government. We could easily see the dark shadow of suspicion dividing the people from the Government. In such an unpleasant atmosphere, we had to face boldly the first query of the farmers whether we were Government servants or Congress volunteers. We had to explain to them that we were neither, but merely investigators studying the existing state of

agriculture of the taluka. When we explained this, we received hearty support from them and it is pleasant to note that they extended their hospitality to us during our investigations.

In every village, we visited, we discussed with the acknowledged leaders of the village folks and experienced old persons, a variety of questions and topics relating to agriculture. Several spoken and written notes of evidence touching upon practically all aspects of the village life were gathered during this preliminary tour. Personal talks with groups of villagers were often more enlightening and amusing than the investigations made. It was a privilege indeed, as some would say, to hear from the very lips of the grand old men of the villages, interesting and experienced reflections comparing rural life of their own time with the present. It was mostly a disappointment to them to see during their old age a state of agriculture which had lamentably receded back rather than progressed forward as may be expected. According to them the land has lost its former fertility. The yield of crops like Kodra which had been 40 maunds per Bigha had come down to 15 to 20 maunds. Similar was the case with other kinds of crops. The live-stock had also deteriorated. Wonderful stories were told about the pulling power of their bullocks in old days who used to pull loads of 100 maunds at a time. Last but not the least, the human species itself had become stunted in growth as compared with the giants of their time.

The summer also afforded a suitable time to study the social life of the people. This is the only time when they are really free and engage themselves in several extravagant expenses which are often beyond their capacity. However, a slow but steady enlightenment is coming over the villagers who are abandoning most of their economically injurious habits. We rejoiced to hear that several villages like Anklav, Davol, Vasna, Ras, Pandoli, Sunav, Pimplav etc., have agreed and pledged not to perform a death feast or to incur more than a certain amount in marriage expense. While we were at Vehra, a wonderful demonstration of youthful activity in this direction arrested our attention. An obstinate

farmer declared his wish to perform a death-feast after his mother who it is said had required her son to have such a ceremony after her death if he at all loved her. The wise persons of the village persuaded him to refrain from such a course and save unnecessary expenses. In case he still persisted in his determination to spend money, they advised him to spend it for a useful purpose like the maintenance of a school. When despite all persuasion, the farmer remained unshaken, the youths of neighbouring villages were called upon to picket the ceremony. The organisers of the picketing were nobly seconded by others and not less than two hundred and fifty persons including some women came to the scene. Needless to say, all arrangements were given up by the farmer under such a heavy pressure from the public. The instance in itself proved of great value in educating the rest of the villagers in many ways.

Such an eventful and instructive tour was however rendered most tiresome by the absence of good facilities for travelling. The railway line, 24 miles in length, passes through only certain villages of the taluka. It was fully used when needed. It helped me to visit only a number of villages of the taluka. The remaining ones were visited by carts or on foot. As it was realised from the beginning that journey by cart was the most tedious and slow in these villages due to narrow, bad and uneven roads, the majority of the villages were visited on foot. Generally journey at noon time was abandoned, but when circumstances required travel at midday, we had a most trying time. There was a blazing sun in the sky above. Absence of crops in the surrounding fields made the spectacle dreary and weighed heavily on our spirits. When everything else was expected to wither under such a scorching heat, the bushes of milky thorns and cactus maintained an amazing growth. Besides this, one could easily notice everywhere a grove of trees welcoming the wearied traveller. In a tropical country where the sun so quickly scorches everything green, nothing affords more genuine delight than shady trees. Trees abound in great variety in the taluka. The Banyan, the Neen, the Tamarind, the Mango, the Rayen, the Mahuda trees etc., with their thick foliage delighted the eye every-

where. Even the Babul, common though it is and thorny, is a thing of beauty by the wayside especially when it is covered with its wealth of canary-coloured flowers.

The tour on foot gives one a nice opportunity to observe the kinds of soil, the condition of the fencing of fields and the facilities for irrigation existing in the taluka. It was observed that patches of dark Kyari as well as sandy fields were interspersed in a large area of Goradu soil. Herds of stray animals were seen running over the barren fields jumping over or breaking through fences and enclosures. Under the hot sun the tanks, ponds and some of the wells, used for irrigation, had dried up in many villages. It was surprising that these had been the basis for the increase in land revenue by fourteen thousands of rupees during the second revision settlement of 1895.

Visits to the villages along the banks of the river Mahi were equally depressing though the presence of the river has a moderating effect on the climate. A short Dhoti (Loin cloth) and a rough Falia (Head wear) on the head constitute all the dress of the poor peasants in these villages. The peasants are mostly Dharalas, notorious for their criminal habits and tendencies. Due to lack of education and lack of suitable subsidiary industries during summer months, they engage themselves in daring dacoities, excessive drinking and other criminal pursuits. The furrowed ravines of the river Mahi fully shelter them in these mischiefs. These evil practices have completely ruined them. Nearly 80 per cent. of their fields, houses and ornaments are mortgaged to the village banias. The standing crops are taken possession of by the creditor. Under such a state of things except a lucky few, nearly all remain semi-starved for at least four months in a year, and have to satisfy their hunger with wild fruits like Rayan, Bore, Kothas etc.

THE MONSOON TOUR

The second tour was undertaken by the end of August when it was still raining. This time we could not cover as many villages as we did during the first tour. Due to the lack of *pucca* roads, the touring difficulties in a

rainy season in this taluka are obvious. The *kucha* roads which are open for communication in winter and summer are filled with water during this part of the year. So it was most troublesome, if not impossible, to travel during monsoon in the taluka. Low lying villages, like Pandoli, Amod, Palej etc., situated in the North East corner of the taluka have the worst means of communication ever heard of.

During the interval of four months between the first and this tour, the peasants had cleansed, manured, ploughed and sowed their fields with different crops. But it was found that the season was not favourable to them. Uneven and uncertain rainfall had created many troubles for the peasants. Excessive rain in the month of August amounting to 24 inches (as against 7 inches in the preceding year in the same month) had nearly flooded the fields and the crops were severely damaged. Nearly two-thirds of the fields of the taluka had to be sown twice. The Kodra, Bajari, Jowar, Sesame and Rice crops were virtually decayed. It was observed that the loss was largely due to bad drainage system in the taluka. Again, uncertain rainfall in the beginning of September caused farmers to wait for days together for the planting of tobacco. When it did not rain during the proper season many cultivators planted tobacco with the help of water from the adjoining ponds, which involved considerable expenses and labour to them. Thus excessive and uncertain rainfall was the most important factor which upset the financial expectations of the farmers at the end of the year.

Besides, it was evident that the farmers suffered from illness and epidemics like Malaria, Cough etc. Absence of adequate medical facilities had allowed the disease to take its course and to leave cure to nature. This not only prolonged the course of the disease but obliged farmers to stay at home and necessitated a greater use of hired labour.

Discussions with the farmers threw some light on the difficulties which they had to face during the monsoon. The most important of these were seasonal scarcity of labour and lack of money to defray the labour expenses for carrying out different agricultural operations at the right time.

We spent some time in discussing agricultural problems

with some of the prominent persons of the District. A list of all eminent persons whom we met during our tours is given in Appendix A at the end of this chapter.

THE WINTER TOUR

The third tour was begun in January, 1934 when Rabi crops had begun to be harvested. The winter was cold and enjoyable and it was possible to travel at any time of the day. A tour in such a land of eternal green is really enjoyable and pleasing to one's aesthetic sense, when the landscape is coloured with rich vegetation and flooded with golden rays of the rising or setting sun. This tour was more detailed and important than the preceding ones. It brought us directly into the closest contact with the farmers. The farmers have their own philosophy of life, their own views of enjoyments and a peculiar faith and trust in their skill to conduct agriculture as a means of livelihood. They have ups and downs; they have to face seasonal calamities of nature like floods, droughts, frost and economic depressions. But they have a way of their own to meet their difficulties. I collected information from them on all aspects of their life and on a number of topics relating to agriculture. A comprehensive questionnaire which was specially prepared with this end in view is given below :—

QUESTIONNAIRE

A Form for the Economic Survey of Borsad Taluka.

5. If no subsidiary occupation is followed, why? Want of knowledge? Want of money? Or are you satisfied with the income from the field?

DETAILS ABOUT LAND

- | | | |
|-----|------------------------|---|
| I. | 1. Total land owned. | 2. No. of Fragments |
| | 3. Land given on rent. | 3A. Land given on share. |
| II. | 4. Land cultivated. | (A) His own, (B) Land taken
on rent, (C) Land taken
on share. |

DETAILS OF CULTIVATED LAND

Crops grown.	Bighas.	Produce.	Money Value.
		Lbs.	Rs.
1. Tobacco.			
2. Jowar.			
3. Bajari.			
4. Math Guwar.			
5. Til.			
6. Kodra.			
7. Rice.			
8. Bavto.			
9. Miscellaneous.			
10.			
11.			
12. Grass Land.			

COST OF PRODUCTION

	Rs.
1. Bullock.	
2. Servant.	
3. Hired Labour.	
4. Seed.	
5. Manure.	
6. Implement repairs.	
7. Rent.	
8. Land Revenue.	
9. Water..	
10. Miscellaneous.	

INTRODUCTION

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FAMILY BUDGET

Heads.	Rs.	Income Heads.	Rs.
1. Corn.		1. Subsidiary income.	
2. Milk and Ghee.		2. Income from rent and Share.	
3. Oil, Spices etc.		3. Income of interest.	
4. Clothes.		4. Farm Income.	
5. House repairs.		5. Other income.	
6. Medicine.			
7. Miscellaneous.			
8. Social.			
9. Interest on debt.			

Rs.
1. Expenditure on Buffalo.
2. Income from Buffalo.
3. Net profit from Buffalo.

INDEBTEDNESS

Lender.	Amount Rs.	Purpose of Loan.	Rate of Interest.	Security of Loan.
1. Showkar.				
2. Co-operative Society.				
3. Government.				
4. Friends and Relatives.				
5. Pathan.				
1. Do you pay land revenue regularly? or do you incur debt to pay it?				
2. Total cattle. Buffaloes. Cows. Bullocks. Other animals.				
3. Where do you get medicine for your cattle? Do you take the advice of the Veterinary Doctor?				
4. Amount of manure in cart loads. Do you make fuel cakes?				
5. Do you use foreign implements or artificial fertilisers? If so, relate your experience; if not why?				
6. Have you got sufficient implements?				

SELECTION OF REPRESENTATIVE VILLAGES

The taluka can be conveniently divided into three groups according to the variations in the character of the soil which is goradu in the west, mixed goradu in the east, and sandy in the south along the bank of the Mahi. As the income of an agriculturist depends mostly on land, we divide the taluka into three groups; first group containing the villages having goradu land, second group mixed goradu land and the third group sandy soil. This classification of villages into three major groups differs from that of the settlement commissioner in his report of 1895. He classified the villages according to the economic position of the people like the caste of the peasants, the facilities for transport and marketing and irrigation.

We then selected representative villages in each group after an elaborate study of the various aspects of rural life. The structure of the soil, the racial composition, the social and religious habits of the people, literacy, indebtedness, marketing and transport facilities etc., which directly influence the economic life of the people, were studied and 37 out of the total 91 villages in the taluka were chosen. The following table gives distribution of the 91 villages in our three groups, their gross area and cultivated area.

Group.	No. of villages.	Total Population.	Gross area Acres.	Cultivated area acres.	No. of selected villages for survey.	No. of selected families for survey.
I.	33	62,060	53,434	48,994	19	152
II.	30	44,741	39,016	35,960	13	80
III.	28	36,158	43,054	34,881	5	56
Total	91	142,959	135,504	119,835	37	288

We add below chief characteristics of each group of villages and brief descriptions of the important villages in each division.

I GROUP

The villages in the first group are 33 and are situated to the east of Borsad and possess mostly goradu soil. They are situated on a higher level than the villages in the other groups. The cultivators in them chiefly are Patidars. Their irrigation facilities though more than in the villages of the 3rd group, are about 50 per cent. less than in the second group.¹ Emigration is little. Transport and trade facilities are enjoyed by the people only since 1930 when the V. K. Railway was introduced. The chief crops raised are Tobacco, Kodra, Bajari, Jowar and Paddy. The wealth of this part of the taluka is mainly derived from agriculture. The houses are simple and old fashioned though brick built. Most of the villages in the group are Nerva villages. Of the 33 villages in the group, Davol, Anklav, Borsad, Napa, Saijpur, Ras, Surkuva and Vasna are very important from many points of view. Davol is famous for its intensive cultivation and supplies vegetables to the surrounding villages. The people depend mainly on agriculture and are happy and contented. Anklav is a marketing town and attracts considerable trade from the surrounding villages. It has been flourishing year after year since the introduction of the railway in the taluka. Borsad is important as a taluka town with its Government offices and Law Courts. It is also an important marketing town. Napa which is a big village has poor cultivation and its peasants are heavily indebted to the village showkars. Saijpur is known for the culture of its people and its attractive buildings. The people are industrious and one of them Mr. K. K. Patel takes keen interest in raising new crops despite many failures. Ras is inhabited by rich Patidars but has developed a proletariat outlook after the large losses of land in the last Swaraj Movement. Surkuva is a small village with only 702 souls, but they are industrious and thrifty and the condition of agriculture is fair. Vasna is a busy village. Though the people are poor, they are mild, honest and hardworking. They are interested in social reforms and in education. Many new crops have been intro-

¹ Vide Chapter II. Section B. Irrigation.

duced into the village during recent years under the guidance of the Taluka Development Agricultural Association. Agricultural Exhibitions and Shows are occasionally held in this village.

II GROUP

There are thirty villages in the second group and they are situated to the west of Borsad. They are on a lower level than the villages in the 1st group and due to bad drainage conditions suffer from floods during years of heavy rains. The soil in these villages is mixed. The chief cultivating class is Patidar. These villages seem more advanced in literacy and wealth than other villages in the taluka. They have enjoyed trade and transport facilities for the last 50 years as they are in the neighbourhood of the Anand Cambay Railway and G. B. S. Railway which were constructed in this part some fifty years ago. This has encouraged migration from these villages and much of the wealth and prosperity of this part of the taluka is due to the earnings of its people, derived from outside. The people have invested a large part of their income in houses, pumps and tobacco trade. Tobacco is cultivated intensively in these villages with the help of irrigation. Sunav, Pimplav, Pandoli, Virsad etc., are the important villages in this group. Sunav though not a marketing town nor a railway station is one of the best villages in the taluka. The people are literate, advanced and rich. Their houses are big and well built. They have decent manners. Pimplav has been recently developed by the wealth of its emigrated sons. Pandoli is a marketing town. Virsad looks like a small town because of its beautiful buildings, one of which was erected at a cost of Rs. 75,000/- . However it is almost a deserted village because its Amins live mostly away in large cities. The agriculture of the place is poor.

III GROUP

The villages in the third group are 28 and are situated along the bank of the Mahi in the south. The soil is sandy and has a low fertility. It can grow nothing more than Kodra, Bajari, Jowar, Bavto and Tuer. The villages are

inhabited mostly by Dharalas and Kolis who are poor and notorious for their criminal habits. The houses are mud-built and the villages are almost deserted in winter and summer, when the cultivators live in fields. They are not provided with good marketing and transport facilities. The people are illiterate, idle and indebted to the Showkars to whom most of their land is mortgaged. The people of Hathi-pura seem to be somewhat better than others as they have been influenced to some extent by the co-operative movement. The village Sankhiad is situated on the bank of the Mahi river. The people here are very poor and have hardly enough sustenance for the whole year. Agriculture in Amiad is in a better condition as its people are industrious and thrifty.

SELECTION OF FAMILIES

The selection of families was a very difficult task in which the assistance of local leaders was very useful. We selected the representative number of families in each group. Wherever we had any difficulty, we approached the local leaders who introduced us to the families and made it easy for us to study their economic condition, and whose frankness and advice were often a source of encouragement to us. Thus easy access was made to several unknown families to study their assets and liabilities, their special characteristics and other interesting aspects as outlined in the questionnaire. Families whose conditions were abnormal in any way were avoided so that general summing up might not be vitiated. Thus we used to get one form filled in by a rich family, three by middle-class families and three or four by poor families in each of the selected villages. The total number of forms thus filled in were 288 in the 37 selected villages.

These forms were filled by house to house inquiry method. The difficulties of getting forms filled can be realised only by those who have practical experience in such a field of work. To persuade an illiterate farmer who is full of misgivings to part with information regarding his income etc., is a difficult task indeed. Century old conservatism prevents him from disclosing details of household income and expenditure and other information regarding the family. The

ordinary people cannot realise the significance of studies like ours and regard them merely as the caprices of the educated. Moreover, they believe that if a person discloses his indebtedness to an outsider, his credit might suffer and he will have difficulties in getting loans or marrying his children. On the other hand, if he gives out that he is prosperous, he fears he may come in for additional taxation. While at Ambali, we were surprised to hear a peasant whispering to his neighbour not to reveal the fact that he had irrigated his tobacco crop. When asked the reason for it, it was with difficulty, we could know that if he declared that his tobacco field was watered from an adjoining pond, he feared imposition of an additional tax on his field by the Government. A strong rumour was prevalent at the time that the Government intended to levy new taxes on the fruit bearing trees of the taluka. The rumour was false; but we had to persuade the cultivators long to convince them that there was no chance of their being taxed at any rate as a result of our inquiry. We are glad to state that we overcame the difficulties in most of the villages that we visited. The acquaintances made by us during the two preceding tours were of much use to us this time. Frank and sympathetic discussions greatly reduced our difficulties and by pertinent questions at the proper moment we squeezed information out of the farmer. The assistance of school masters who will exercise a supreme influence upon the farmers was very helpful when friendly discussions could not succeed. Letters of introduction from local leaders or from the relatives and friends of the farmers concerned proved valuable to us on certain occasions.

When we first approached a peasant and asked him his full name, a shudder seemed to pass through his entire body. Questions relating to the members of his family, their literacy and the number working in the field, made him doubt the motives behind our inquiries and he tried to escape from further questions by giving a flimsy excuse. He could not understand why so many details were asked for. Generally however we succeeded in dispelling his misgivings after a certain amount of explanation and persuasion. Questions relating to his subsidiary occupation seemed to take him

by surprise. He had a very few of them and his income from them was generally too indefinite to be remembered carefully. When asked about the land and its details a sudden change in his facial expression was visible as he struggled hard to recollect the plots that he owned in various directions in his village. His wrinkled forehead and quivering lips seemed to indicate that he was cursing the village Showkar who had deprived him of much of his land. Answers to questions as to the yield of crop of each field that he had cultivated were almost always disappointing. Instead of giving the yield he frequently said that his labours were lost due to his bad luck. It is difficult to forget his deep eyes gazing into vacant space showing his utter helplessness against the caprices of nature. Perhaps he wondered why he was worried by us with much detailed questions when he had not enough to provide even for his bare subsistence. When asked about his cost of cultivation he would point to the sky above meaning by that the coppers spent on his cultivation were as innumerable as the twinkling stars above. He was not used to keeping accounts, and so the details of the cost of cultivation could be gathered with great difficulty. Questions relating to the expenses of his family budget made him laugh; how could be spent anything on so many items from his insignificant income? It was possible to get only a rough estimate of his expenses under different heads of his family budget. Questions regarding his debts troubled him most, but a strong believer in providence, he consoled himself with the idea that God had burdened every farmer with debts due to his sins in the life before. Inquiries regarding details of his debts harassed him as he did not know how to distinguish his debts under different heads. He never seemed to grudge his ancestral debts which he thought were as natural as was his birth in this world. He stated that he was regular in the payment of his revenue even though he had to borrow money or to sell his property for the purpose. He felt a sense of relief when he was asked to relate the pedigree of his cattle which were as dear to him as his children and were a source of profit to him. An uproar of laughter would make the atmosphere cheerful when he replied

that animal excretion was never used for any other purpose than manuring. It seemed that he had no use for the modern iron implements or chemical manures.

EFFECT OF THE SURVEY ON FUTURE RURAL POLICY

India has been behind other countries in agricultural progress. But it is a good sign that both the Government and the people are now anxious to improve the country's rural conditions. Mahatma Gandhi has inaugurated the Village Industries Association and diverted his tremendous energy to the revival of the dying peasantry. The Government of India has set apart about one and a quarter crore of rupees specially for agricultural improvements and the rural reconstruction work. Several projects of this nature are already on foot in the different provinces of the country. The Government of Bombay has decided to encourage the rural industries specially in the poultry keeping and bee keeping. It is trying to improve rural sanitation and agricultural practices.

We think before such a scheme of rural reconstruction in any area is put into effect, a comprehensive survey of the social and agricultural conditions of the tract should be made. Such a survey would prove a valuable guide to the reformer who during initial stages at least is unaware of the problems and conditions of the area. It would give an idea of the outline of the problems that he has to tackle, and suggest to him the course of action that he should follow.

In our study we have attempted to survey the problems of our taluka as comprehensively as we could. We have aimed at both an extensive and intensive review, so that our conclusions could be widely applicable as possible without at the same time losing their accuracy. We have made wide use of previous studies of the same or similar problems by other authors, commissions, associations etc., and we have drawn upon their experience to guide us in our investigations. But we have applied their conclusions to the problems of our taluka only when we felt that our own experience also bore them out. We hope our study will prove useful to all who are interested in the welfare of rural India.

USE OF OLD STATISTICS

During the course of our study, we could not obtain the taluka figures for the year 1931 regarding wells and tanks, fragmentations and sub-divisions of agricultural holdings, details of population by caste etc. So we depended on the figures as published in the old Government records and on those supplied by the Taluka Development Agricultural Association, Borsad. These facts relate sometimes to the year 1921. But we think, that they are more accurate than those of 1931, when the people in accordance with the Congress mandate boycotted the census enumeration.

APPENDIX A.

LIST OF EMINENT PERSONS

We visited the following eminent persons besides many others in and outside the taluka in connection with this thesis and are highly obliged to them for their valuable help to us.

1. The Inspector of Agriculture, Kaira Dist., Anand.
2. The Supervisor of the 'Co-operative Union', Borsad.
3. Mr. Mukundrai M. Mehta, the Agricultural Overseer, 'The Taluka Agricultural Development Association', Borsad.
4. Mr. P. N. Patel, B. A., Bai-at-Law, Bombay.
5. Mr. Motibhai Narshibhai Amin, Baroda.
6. Dr. C. S. Thakar, L.M. & S., F.C.P.S., Bombay.
7. Dr. Maganbhai Dahyabhai Patel, Ph. D., Baroda.
8. Mr. Govindbhai Ashabhai Patel, Borsad.
9. Mr. Chaturbhai Desaibhai Patel, B.A., LL.B., Borsad.
10. Mr. Kalyanbhai Kashibhai Patel, Saijpur.
11. Mr. Chaturbhai Desaibhai Patel, B. A., Surkuva.
12. Mr. Jethabhai Zaverbhai Patel, Dhundakuva.
13. Mr. Zaverbhai Dajibhai Patel, B.A., LL. B., President of the Taluka Local Board, Borsad.
14. Mr. Ranchhbhai Shamalbhai Patel, Napa.
15. Mr. Lallubhai Nathabhai Patel, Ankлав.
16. Mr. Govindgir Iswargir Gosai, Ankлав
17. Mr. Iswarbhai Purshottam Patel, Bodal.
18. Mr. Jethabhai Nathabhai Patel, Ashi.
19. Mr. Motibhai Jivabhai Patel, Ashi.
20. Mr. Shivabhai Desaibhai Patel, Anklav.

CHAPTER II

PHYSICAL DESCRIPTION AND IRRIGATION

SECTION A.

PHYSICAL DESCRIPTION OF THE TALUKA

SHORT HISTORY

The taluka of Borsad is under the Kaira Collectorate of Bombay Presidency. It is one of the seven Talukas of the Kaira District, situated in the southernmost part of it. During the old days it was under the direct control of Rajput kings of Anhilwad or modern Patan. At the end of the fourteenth century it passed to the Muhammedan kings of Ahmedabad. It was transferred to the Mogul kings of Delhi in 1573 A.D. The Marathas appeared in the villages of the taluka in 1720 A.D. From that year to the fall of Ahmedabad in 1752 A.D. the taluka was the scene of perpetual struggle between the Marathas and the Muhammedan viceroys. The Marathas were victorious and the taluka was handed over to the Gaikwar. The ruins of the fort of Borsad are the relics of the Maratha rule in the taluka. The Gaikwar transferred it to the British Government in 1817 A.D. for the maintenance of troops under subsidiary system. Several changes have been made since then in the area of the taluka and in the number of the unit. To-day the taluka contains 91 villages with an area of 211 sq. miles.

BOUNDARIES

The taluka lies on the 22 degrees North Latitude and 12 degrees East Longitude. It is bound on the north by Anand and Nadiad talukas, and on the west by the territories of H. H. the Gaikwar of Baroda and the Nawab of Cambay. It is bordered by the river Mahi on the east and on the south. The taluka would have been a compact area had it not been cut into by the territories of native states. It has now the

most irregular shape and most tortuous boundary of all the talukas in the collectorate.

PHYSICAL APPEARANCE

As there are no mountains or hills in the taluka, it is almost a vast level plain except along the banks of the river Mahi, where the surface is rough and furrowed into deep ravines by heavy floods in monsoon. The land is beautiful being studded with groves of trees everywhere. There is a general gentle slope from east to west and hence the river Mahi runs in this direction towards the bay of Cambay.

THE RIVER MAHI

Mahi is the only river that runs along the eastern and south-west corner of the taluka. It rises from the Malwa hills of 1850 feet in height and runs a course of 350 miles along the flat plains of North Gujarat; it is the largest river in the whole of Gujarat after the Tapti and the Narbada. It separates the taluka from Baroda on the right and from the district of Broach on the left. It enters the taluka at Umota and then flows along a zig-zag path to meet the bay of Cambay fifty miles away from Umota. Under a big tide nearly the whole course is affected with sea water. At about 30 miles from the sea, near Dehvan, it reaches the eastern limit of the Broach District. Here it widens to a breadth of more than five miles with a depth of 20 feet. However, the river elsewhere seems to be shallow except during the rainy season, when it is full of water from bank to bank, submerging the villages along its banks and destroying the crops and cattle of the people. It is said to be the most mischievous river in Gujarat. Each year a cry of woe is heard from one or the other villages situated along its banks. In summer, however, it is fordable at three centres, Umota, Khanpur and Dehvan; the first affording the safest crossing. The strength of the tide and the general shallowness of the river makes it useless for navigation. Dehvan was a port in the past. Since the construction of Vasad Kathana Railway it has again started to show signs of development. During winter and summer sugar, rice, cocoanuts, etc., are imported and

tuer and tobacco are exported from this port. We think, if proper encouragement were given to its trade, it may soon develop into a fine port.

The river is of no use at all for irrigation. As the Bombay Gazetteer of 1879 remarks, "the high rugged banks of the Mahi prevents its waters being used for irrigation, and so deep is its bed, that it drains rather than feeds the springs near its bank".¹

The land along the bank of the river is called *Bhatta* or the river water land, the best alluvial soil. "With the exception of a small plot near Umota and Kothiakhad there is no *Bhatta* in the taluka. Elsewhere the banks are too precipitous to admit of cultivation, and the land in the immediate vicinity is broken and rent by the torrents pouring into the Mahi during the rains, and is fit for little but grazing grounds and cattle walks".²

The river is esteemed as sacred among the people. There are pilgrimages every full moon day and specially on the 15th of Chaitra (April). Oaths are taken in its name and it is believed that guilty persons fail to drink its water. As the Bombay Gazetteer observes, "the height of its banks and the fierceness of its floods, the deep gullies through which the traveller has to pass on his way to the river and perhaps above all the bad names of the tribes residing on its northern bank, explain the proverb, 'when the Mahi is crossed, there is safety' ".³

AGRICULTURE

The taluka has a population of 1,43,000 of whom about 118 thousands are agriculturists. Hence agriculture is the main occupation which feeds nearly 82 per cent. of the people.

Following are the main physical conditions which determine the character of agriculture :—

1. Soil.

2. Climate.

¹ Page 4.

² The Revision Settlement Report, Borsad taluka, 1895, page 54.

³ Gazetteer of the Bombay Presidency, Vol. III, 1879, page 4.

3. Rainfall.

4. Drainage.

It shall be our task to examine each of these factors in detail in relation to the taluka of Borsad in these preliminary pages.

SOIL

Land is one of the four important factors of production. It represents the final source of material goods of every kind. Its connotation has been extended by economists so as to include the permanent sources of utilities whether they are found in land as the term is commonly used or in seas and rivers, in sunshine and rain, in winds and waterfalls.¹ But to an agriculturist land means primarily the area that supports vegetation. It is the foundation on which the superstructure of agriculture is erected.

The friable portion of land in which the roots of plants are fixed is called soil. The soil is ordinarily defined as the layer of more or less disintegrated rock which covers portion of the surface of the earth and which is fitted under suitable climatic conditions to support the growth of plants.² It consists of proximate constituents, namely clay, sand, gravel, lime and some quantity of organic matter resulting from the decay of previous vegetable growth. Richness of the soil varies according to the absolute quantities and relative proportions of these proximate constituents. The soil of this taluka is one of the most fertile and alluvial not only in the district, but in the whole of the Bombay Presidency. It resembles the alluvial soil of the Indo-Gangetic valley and is known as the baser or the goradu soil.

It can be observed from the appended table showing figures for land in the taluka, that the total land in the taluka in 1932-33 was 135 thousands of acres of which 89 per cent. were under cultivation and 11 per cent. were waste land including fallow. A part at least of the increase in the total area in 1921-22 over the preceding years must have been due to

¹ Principles of Economics, Marshall, page 146.

² Soils of the Bombay Presidency; Bulletin No. 146 of 1927 of the Government of Bombay, page 2.

Table showing cultivated and Non-cultivated land
in the Taluka between 1919-20 and 1932-33¹ (000s omitted.)

Year	Total area Acres	Gross culti- rated area Acres	Double cropped area Acres	Net culti- rated area Acres	Waste Land Acres	Gross culti- rated land as % of total Area	Waste land as % of total area
1919-20	132	118	3	115	17	89	11
1920-21	133	117	2	115	18	88	12
1921-22	135	120	2	118	17	89	12
1922-23	135	119	1	118	17	88	12
1923-24	135	119	1	118	17	88	12
1924-25	135	120	2	118	17	90	10
1925-26	135	120	3	117	18	91	9
1926-27	135	122	4	118	17	90	11
1927-28	135	123	5	118	17	90	11
1928-29	135	121	3	118	17	90	11
1929-30	135	121	3	118	17	90	11
1930-31	135	119	1	118	17	88	12
1931-32	135	121	4	117	18	90	11
1932-33	135	121	3	118	17	90	11

¹*

¹These figures are received from the Taluka Agricultural Development Association, Borsad.

survey operations which readjusted the boundaries between the British districts and the adjoining Native States. Since then, however, the recorded total area in the taluka has not been changed. There has been some slight variation in the gross area under cultivation. But this is largely accounted for by the variations in double cropping as is evident from the comparative stability of the net area cultivated. The amount of waste land including fallows have also remained remarkably constant throughout the last 14 years. This is due to the very small amount of land available for cultivation, which has not yet been cultivated. Such land has never been more than 250 acres in the taluka since 1890.

It is clear then, that the taluka has very little virgin soil to which agriculture may be extended. The land surface can never be materially increased.¹ Hence, an increase in production must depend on intensive farming. And with the high density of population in the taluka of per sq. mile, this problem has become absolutely urgent. "What are the reserves of soil fertility? How are they utilised by different crops? How fast do the various elements become available? What are the losses by weatherings? What are the effects of different systems of culture? What practical agronomical systems will be the most effective in maintaining the soil fertility?"² To these questions we now turn. The prosperity of human race depends in the last analysis, upon the soil. We ought to know just what is occurring in various soils.

THREE KINDS OF SOIL

The soil of this taluka may be classified for ordinary purposes as under :—

1. Goradu soil.
2. Mixed soil.
3. Sandy soil.

We give the following table, an analysis both chemical and mechanical of these soils (Surface soils).

¹ To quote Marshall, "The fundamental attribute of land is its extension.... The area of the earth is fixed. Man has no control over it.... There is no supply price at which it can be produced. Page 145. Principles of Economics.

* Prof. East. World Population Conference, 1927.

CHEMICAL ANALYSIS

Name of the constituent	Goradu soil %	Mixed soil %	Sandy soil %
Lime	0.56	0.51	0.28
Potash	0.40	0.20	0.10
Phosphoric acid	0.22	0.012	0.003
Nitrogen	0.085	0.034	0.038

MECHANICAL ANALYSIS

Clay	12.03	5.94	4.66
Fine silt	4.33	1.50	1.44
Medium silt	3.76	1.20	1.00
	20.12	8.64	7.10
Coarse silt	8.59	3.62	4.76
Fine sand	65.34	80.91	82.63
Coarse sand	5.95	6.83	5.51
Grand Total	100.0	100.0	100.0

(Average samples of soils are represented here)¹

For comparative purposes we give below a table indicating roughly the standards that may be taken for the soils of the Bombay Presidency.²

¹ This analysis was made by R. B. D. L. Sahasrabudha, M. Sc., agricultural chemist of the Government of Bombay, in 1931 for the Agricultural Development Association, Borsad taluka. Mr. Markandrai M. Mehta, B. Ag., Agricultural Overseer to the Association has kindly supplied me these figures.

² Soils of the Bombay Presidency, Bulletin No. 160 of 1929, page 3.

CLASS:-	Percentage of:-	1	2	3	4
		Rich soil More than %	Good soil	Fair soil	Poor soil. Less than %
NITROGEN	0.1	0.06 to 0.1	0.03 to 0.06	0.03	
PHOSPHERIC ACID					
1. Non-Clayey	0.1	0.06 to 0.1	0.03 to 0.06	0.03	
2. Clayey soil	0.2	0.1 to 0.2	0.05 to 0.1	0.05	
POTASH					
1.. Non-Clayey	0.25	0.15 to 0.25	0.05 to 0.15	0.05	
2. Clayey soil	0.3	0.2 to 0.3	0.07 to 0.2	0.07	
LIME	2.0	0.5 to 1.5	0.1 to 0.5	0.1	

INTERPRETATION OF ANALYTICAL FIGURES

A comparison of the above two tables indicates that the taluka soil is neither very rich nor very poor in nitrogen. As regards nitrogen, the Goradu soil comes under class two whereas mixed and sandy soils come under class three. Thus on the whole the soil of the taluka seems to have a sufficient quantity of nitrogen. Nitrogen is very essential to cereals which occupy nearly 70 per cent. of the total cultivated land. Besides, it is nitrogen which helps to bring the different mineral constituents of the soil into action. If continually cropped, a land loses much of its 'original and indestructible' power through loss of nitrogen. This element is restored to a certain extent by the spontaneous action of nature, if the soil is kept fallow. But it is restored more promptly and effectively by fertilisers and by rotation of crops, specially of root crops. As the proportion of land which lies fallow every year to the net cropped area is very small (only 3 per cent.) the taluka peasant has to resort to artificial fertilisers and green plant manures to supply this deficiency. Modern science has thrown considerable light on this problem; and fortunately there are sources available which can supply enough nitrogen to the soil of the taluka. Green plant manures for example are cheap and are easily procured.

On the other hand the quantities of Lime and Potash in

the soils of this taluka are more than required. Lime works beneficially in many ways. It not only acts as a plant food but makes clayey land permeable to moisture and enables it to absorb potash ammonia and other useful salts. It helps the process of nitrification by which means nitrogenous matters in the soil are made available for the plant use. "The presence of lime helps to a great extent in counter-balancing the deficiencies of nitrogen and phospheric acid. The lime by its presence makes the existing nitrogen, potash and phospheric acid more available to plants than they would otherwise be".¹

The phospheric acid is deficient in the mixed and sandy soils of the taluka, whereas it is fairly good in the Goradu soil. It is most useful for tobacco cultivation, and the taluka so famous for its tobacco should endeavour to get it in sufficient quantity through fertilisers and green manures, to improve the production, both in quality and quantity.

GORADU SOIL

Goradu soil is a loam or a mixture of clay and fine sand. It does not break easily and is characterised by immense depth. It is difficult to work in this soil as the constituent particles of clay are cohering and porous than the sandy soil. But it is very suitable for irrigation. It is one of the most fertile soils of the Presidency and is capable of growing a larger variety of crops than other soils. The soil retains moisture for a long period and so the cultivator selects low lying fields for rabi crops. During winter it absorbs moisture in the form of dew which makes it possible to grow winter crops after the rains have ceased. Capillary attraction or the force by which water is brought up from the sub-soil to the surface during dry weather is more active in this land than in coarse sands. It being mixed with lime never cracks like the black soil.

The land is capable of growing many varieties of crops like Kodra, Bavto, Paddy, Pulses, Tuer, Mag, Adad, Cotton, Tobacco, Juwar, Bajari, vegetables and fruits of many kinds. The goradu plain in the taluka is covered everywhere

¹ Soils of the Bombay Presidency, pages 2-3.

with magnificent trees of Mango, Rayan, Mahuda, Ambli, Babul, Kothi, Samadi, Neem and others. The fields are enclosed by live fences of *Thors*—thorny milky bushes—giving the country a park like appearance. Even in summer these groves of trees and hedges appear extraordinarily green. Hence the taluka is known as *Charotar* or the best land and is called the garden of Gujarat.

MIXED SOIL

The mixed soil is slightly inferior to goradu soil as it has a greater quantity of sand. It contains the same fertilising elements and produces all the crops which are grown on Goradu land. However being weaker in its chemical properties, it needs greater manuring than goradu soil. It requires less labour in ploughing and weeding than in the former. The soil in nearly a third of the villages of the taluka is predominantly of this type. These villages are situated in the west of Borsad and Napa.

SANDY SOIL

The sandy soil is the least fertile type. Of the three varieties it possesses the highest proportion of sand which is 94.9 per cent. It is easily ploughed and is suitable only for Juwar, Bajari, Kodra, Tuer, and a few of the Rabi crops. It is easily friable and porous. It is the least retentive of moisture of the three. It is called the "hungry" soil and requires a large quantity of manure to keep up its fertility. Lacking phospheric acid, it cannot produce tobacco at all. Generally this soil is found in abundance in the villages along the banks of the Mahi. The revision settlement report of Borsad taluka, 1895, remarked that, "the soil here is decidedly inferior to that of other groups in consequence of the fertilising alluvial particles in it being more liable, where the ground is full of ravines, to be continually, though insensibly, washed out".¹

KYARI BLACK SOIL

A special variety of goradu soil is known as *Kyaries* or the low lying rice lands. There are extensive tracts of rice beds

¹ Page 12.

in Gorat tracts of Ras, Pandoli, Sunav, Pimplav, Ambali, Ankлав, etc. They are the low lying tracts receiving the drain water of the surrounding country. They grow excellent rice. They preserve moisture and are suitable for winter crops like Groundnuts and Grams. The soil possesses in a wonderful degree the power of expansion and contraction. Its colour is generally black. In the hot weather the black soil is traversed by cracks, deep and wide, which disappear on the first advent of the monsoon showers. The periodical expansion and contraction injures the roots of the growing trees. Such fields are barren even of bushes and hedges. The land does not require frequent ploughings as nature herself performs this work effectively for the cultivator. Under the scorching sun the surface soil is loosened into a friable condition to a depth of 2 or 3 inches which is swept into fissures as the monsoon breaks.

The proportion of this type of soil in the taluka is very small, being 7000 acres in the whole of the taluka or about 6 per cent. of the total cultivated land. The soil cannot be cultivated for the Jarayat or dry crops, but produces rice of good quality during a good season. During scarce rains, however, the yield from this kind of land is very poor.

VILLAGES ACCORDING TO KIND OF SOIL

It has been observed that nearly all villages of the taluka contains all the three kinds of soil to some extent. Thus a village along the bank of the river Mahi, having a larger proportion of the sandy soil, still possesses goradu or mixed soils. It is therefore impossible to group the villages under one or the other kinds of the soil. Such a grouping, however, is essential if we want to study the influence of soil fertility on agricultural economy in different parts of the taluka. For our purpose, we have endeavoured to group the villages under one or the other kind according to the quality of the major portion of soil they contain.

We divide below villages of the taluka into three groups, and the soil in each group representing largely one of the

three varieties that we have noted.¹ In the following table we give a list of these villages by groups as also statistics of population for 1891 and 1921 and 1931 together with gross and waste land of each village.

GROUP I.

(Villages in which major portion of the soil is goradu)

No.	Name of the Village.	Population figures.			Gross land Acres.	Waste land Acres.
		1891	1921	1931		
1.	Anklav	5,462	4,602	2,586	5,267	426
2.	Alarsa	3,385	2,888	3,046	2,171	156
3.	Asodar	2,256	2,001	2,280	2,089	196
4.	Ambali	1,595	1,202	1,451	1,313	105
5.	Ambai	1,871	1,792	1,713	843	91
6.	Borsad	13,910	12,116	13,150	6,139	587
7.	Bodal	1,817	1,563	937	1,606	109
8.	Bhetasi Tal	608	595	566	985	88
9.	Davol	3,547	3,220	2,011	2,803	184
10.	Dehmi	1,541	1,356	1,533	1,847	102
11.	Dedarda	1,839	1,474	1,888	1,576	143
12.	Dhundakuva	873	790	288	705	82
13.	Divel	340	269	288	1,279	101
14.	Dhobikui	348	338	297	366	28
15.	Dabhasi	1,805	1,410	854	1,234	97
16.	Haladari	622	820	728	649	48
17.	Harkhapura	611	561	599	625	56
18.	Khedasa	1,883	1,541	1,486	1,428	105
19.	Kansari	873	718	786	946	73
20.	Kasumbad	950	917	953	1,200	72
21.	Kantharia	1,451	1,405	1,340	1,277	97
22.	Khadol	2,155	2,045	1,878	1,752	105
23.	Muchkuva	1,814	1,490	1,806	880	78
24.	Nisaraya	1,762	1,399	1,521	1,790	144
25.	Naiman	993	968	981	656	40
26.	Napa. Tal.	3,467	2,808	1,456	2,128	258
27.	Pamol	1,908	1,767	1,863	1,602	112
28.	Ras	4,290	3,445	1,854	3,167	218
29.	Saijpur	1,983	1,714	927	949	85

¹ We are greatly indebted to some of the experienced Talatis like Messrs. L. N. Patel of Sunav and J. R. Patel of Anklav who gave us an invaluable advice in this arrangement.

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No.	Name of the Village.	Population figures			Gross land Acres.	Waste land Acres
		1891.	1921.	1931.		
30.	Shinglav	1,368	1,058	1,601	1,175	94
31.	Surkuva	727	702	620	669	47
32.	Vehra	2,387	2,020	1,361	1,813	174
33.	Vasna	1,233	1,118	468	1,505	99
TOTAL		... ...	62,062	54,056	53,434	4,400

GROUP II.

(Villages in which the major portion of the soil is mixed).

No.	Name of the Village	Population figures.			Gross land Acres.	Waste land Acres.
		1891.	1921.	1931.		
1.	Ashi	1,706	1,529	1,006	1,502	100
2.	Amod	2,077	1,708	905	1,623	144
3.	Banejada	997	733	124	792	80
4.	Hamanwa	1,965	1,669	1,469	1,718	114
5.	Bhavanipura	842	854	942	511	46
6.	Bochasan	3,267	2,795	430	2,183	176
7.	Danteli	1,137	802	428	738	59
8.	Davolpura	571	514	366	755	64
9.	Golel	865	851	59	868	70
10.	Isnav	1,648	1,369	343	1,126	88
11.	Israma	618	515	600	433	40
12.	Jesarva	582	627	602	519	41
13.	Jantral	2,815	2,102	2,037	1,927	149
14.	Jogan	910	1,014	946	753	48
15.	Khanpur	1,582	1,312	1,259	1,095	96
16.	Khadana	1,717	1,547	1,314	2,032	125
17.	Lakkadpura	161	230	246	464	26
18.	Palaj	3,843	3,056	2,205	1,947	168
19.	Pandoli	5,090	4,768	4,913	4,476	251
20.	Pimplav	2,609	1,854	435	1,472	164
21.	Porda	1,510	1,463	534	1,012	78
22.	Rangipura	622	652	698	608	30
23.	Rupiapura	463	528	114	540	42
24.	Sunav	8,685	8,455	425	1,710	170
25.	Santokpura	506	622	200	610	51
26.	Varadala	2,875	2,228	1,309	1,754	158
27.	Virol	1,002	1,030	803	1,017	72
28.	Virsad	8,892	8,114	2,845	3,226	284-
29.	Vadeli	1,360	1,161	1,173	988	86
30.	Vachhiel	633	646	660	617	46

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GROUP III.

(Villages in which the major portion of the soil is sandy).

No.	Name of the Village.	Population figures			Gross land Acres.	Waste land Acres.
		1891.	1921	1931.		
1.	Amrol	...	1,081	1,357	1,314	319
2.	Asarma	...	903	1,201	2,016	49
3.	Badalpur	...	2,284	363	858	79
4.	Bhanpur	...	258	337	689	389
5.	Bhetasi, Vanto	...	1,380	1,602	2,328	789
6.	Dehvan	...	3,088	3,180	2,219	621
7.	Gajna	...	867	911	1,500	69
8.	Gorwa	...	783	825	2,957	236
9.	Hathipura	...	610	706	(included in Asarma)	
10.	Kanwadi	...	1,795	1,662	1,291	449
11.	Kankapura	...	2,559	2,396	1,157	81
12.	Kathana	...	2,887	3,346	1,557	228
13.	Kothiakhad	...	467	559	(included in Umeta)	
14.	Napa Vanto	...	1,694	1,832	1,765	106
15.	Ralaj	...	1,783	1,746	2,731	683
16.	Salol	...	2,429	2,635	3,341	988
17.	Sankhiad	...	879	881	(included in Umeta)	
18.	Umeta	...	1,541	1,502	4,363	1,332
19.	Amiad	1,585	1,287	1,103	1,634	93
20.	Dali	654	515	482	964	75
21.	Kalu	1,260	1,265	1,202	1,101	72
22.	Kathol	588	707	1,002	1,902	128
23.	Kanbha	1,836	1,636	1,746	1,555	122
24.	Khatnal	1,475	1,166	1,133	1,455	114
25.	Malu	358	290	328	680	193
26.	Umlav	637	577	540	804	60
27.	Vatra	1,855	1,123	1,270	1,726	437
28.	Bhetasi (Baria)	...	1,859	1,500	1,117	51
	Total	...	36,158	37,877	43,054	8,143

GRAND TOTAL

of all the villages of
all the three Groups

1,42,961 1,20,828 1,35,504 15,799

The villages of the first group are generally situated to the east part of Borsad, those of the second to the west and north-west of Borsad and those of the third group are on the bank of the Mahi to the south of Borsad. The first group

contains 33 villages with 48,994 acres of cultivated land or 41 per cent. of the total cultivated land in the taluka. The second group contains 30 villages with 35,960 acres of cultivated land or 30 per cent. of the total cultivated land in the taluka. The third group contains 28 villages with 34,881 acres of cultivated land or 29 per cent. of the total cultivated land in the taluka.

CLIMATE

The climate of the taluka is varying, much the less trying. There are three regular seasons in the year. From November to February the air is pleasant, cool and bracing though often dry. This is the winter season. By the beginning of March the hot weather commences gradually and increases in intensity during May and June. This is summer. The atmosphere is dry and parching. However, the climate is somewhat humid compared with the northern talukas of the District, owing to the nearness of the sea of Cambay and the river Mahi. If, from any cause the cool breezes from the waters fail to sweep over the taluka, the heat is most oppressive, the thermometer often rising above 110 deg. F. in the shade. The showers of rain begin to cool the atmosphere by the middle of June. During the monsoon, though the air is moist, it is hot and oppressive. The atmosphere in September and October is more unwholesome than at any other time in the year and the people suffer considerably from malarious fever.

In the following table, we give the figures,¹ showing the temperatures in different months during the years 1932 and 1933. They clearly point out that even during the winter and monsoon seasons the atmosphere is hot and oppressive. The temperature never falls below 55 deg. F.

At the Grant-in aid Municipal Dispensary of Borsad.

A TABLE SHOWING TEMPERATURE—FIGURES OF THE TALUKA FOR THE YEAR 1932 AND 1933.

No	Months.	1932		1933	
		Maximum degrees	Minimum degrees.	Maximum degrees.	Minimum degrees.
1	January	92	59	87	52
2	February	93	54	92	60
3	March	104	69	108	65
4	April	108	75	109	73
5	May	116	83	111	76
6	June	106	81	108	80
7	July	106	77	102	79
8	August	99	78	92	77
9	September	99	79	96	79
10	October	99	76	97	70
11	November	91	62	91	65
12	December	90	55	86	58

EFFECT OF THE CLIMATE

Climate plays an important part in the economics of agriculture. Severe cold resulting in frost destroys rabi crops like Tuer, Pulses, Cotton, Tobacco, etc. A moderate cold on the other hand, if it is preceded by a good rainfall, results in a prosperous outturn. Again extreme heat exhausts the people and renders them unequal to their hard labour in the fields.

During the last five years, frost has fallen in the taluka about four times, and has severely damaged the crops of the peasants. In the year 1933-34 it fell three times, once on the 14th of January, next on the 28th of January and then on the 6th of February. The very next year also (in 1934-35), it fell for about a week at the beginning of January. During both the years, these frosts ruined the Tobacco and Tuer crops.

RAINFALL

The importance of rainfall is obvious in an agricultural area like the taluka under survey. Absence of irrigation facilities in the form of canals in this taluka, which exist in the United Provinces, the Punjab, the Sindh and in some parts

of Deccan, has still more enhanced its importance and has made agriculture a mere gamble in the rain. Peasants eagerly await the arrival of rain from the beginning of June. Generally the rain commences in the taluka, during the middle or the third week of June. For the last seven years the beginning of the monsoon has been very regular. The rainy season lasts for four months. Commencing in the middle of June, it ends generally in the first week of October.

No one climatic feature represents on the average so correctly dry farming possibilities as does the annual rainfall. But other factors e.g. the distribution of rainfall during different months of the season, the water holding power of the soil, the various moisture dissipating causes such as winds, high temperature, abundant sunshine and low humidity frequently combine to help or hinder the benefits of annual precipitation. From the preceding pages, however, it seems that the formation and lay out of the land and the climate of the taluka are not likely to hinder the benefits of the annual precipitation if it were sufficient and evenly distributed.

VOLUME OF WATER

In the following table, we give figures of annual rainfall at Borsad during the last 24 years.

Year.	Rainfall, inches	Plus or minus % age variation from the 1924 standard. ¹
1910	40.81	+19
1911	12.92	-63
1912	46.61	+35.8
1913	56.91	+65.9
1914	44.74	+30.3
1915	19.27	-56.2
1916	23.55	-31.3
1917	72.45	+111.2

¹ The amount of rainfall in 1924 was considered sufficient for a bumper crop in the taluka. Hence the year 1924 is taken as a standard year.

Year.	Rainfall. inches.	Plus or minus % age variation from the 1924 standard.
1918	6.88	-80.0
1919	30.90	-10.0
1920	24.06	-29.8
1921	39.63	+16.1
1922	27.22	-20.6
1923	21.49	-37.3
1924	34.31	Standard year
1925	25.64	-25.0
1926	47.29	+37.8
1927	78.66	+129.2
1928	34.50	-10.6
1929	31.63	-7.8
1930	58.96	+71.9
1931	46.09	+34.4
1932	31.76	-7.4
1933	48.72	+41.9 ¹

After careful consultation with the experienced villagers of the taluka, we arrived at the conclusion that a rainfall of 34 inches is quite sufficient for a bumper crop. According to experts in the local Taluka Development Agricultural Association, Borsad, 23 inches a minimum precipitation is believed to be sufficient for a normal crop.

The average volume of rainfall during the 24 years was 38.5 inches which was 4 inches more than the rainfall that we have chosen as our standard. We thus observe that the average rainfall in the taluka was slightly more than required. The annual precipitation in 11 years was more than even the average rainfall i.e. 38.5 inches. It rained to our required standard of 34 inches only in 2 years. In 7 years it rained between 34 and 23 inches and in 4 years it was found below 23 inches. If we consider the statement of an American,

¹ The figures for rainfall are taken from the Kaira Gazetteers, 1904 and 1916 and also from the records of the Taluka Development Agricultural Association, Borsad.

Dr. Wistsoe,¹ as having 15 inches of rainfall as sufficient one for dry farming, we had only 2 drought years in a period of 24 years. But apart from this proposition, generally we had, in a period of six years :—

3 flood years when rainfall was above 38 inches and when crops were damaged.

2 normal years when rainfall was sufficient.

1 drought year.

Thus there are more wet seasons in the taluka than normal or dry ones. It has been observed that the peasants are not in favour of a wet season. A wet season renders weeding operations more expensive than a dry one. Again, a wet season does not always result in a higher physical output of crops (for there are more chances of crops being decayed or damaged by excess of rain) while the smaller crop of a dry season is financially remunerative to the peasants.

There is a general complaint elsewhere in the Presidency that peasants do not make the best use of rain water. Dr. Mann, the Agricultural Adviser to the Government of Bombay, complained before the Royal Commission on Agriculture, 1927, that it was the carelessness of the peasants that had accentuated famines during the times of scarce rain. So far as this taluka is concerned, the peasants seem to be very economic and do not waste the supply of rain water. They carefully watch the movement of rainfall and utilise it in the production of crops in the best way possible. For example, if they see, that the rain is insufficient for crops like rice or tobacco they would immediately replace them by Bajari and Juwar which require less water.

DISTRIBUTION OF RAINFALL

It has been observed that even when the total rainfall in a particular year may be sufficient, it may be very unevenly distributed. The Collector of Kaira had also to say that the rainfall in the district was precarious.² Dr. Mann attributed

¹ Dry Farming, by John A. Wistsoe, President of the Agricultural College of Utah (U. S. A.), page 22.

² Evidence Volume II, Part I, Royal Commission on Agri., page 351.

it as one of the dominant factors in the Presidency which upset a good many of our calculations and rendered agriculture an uneconomic industry.¹

The actual distribution of annual rainfall during the last 11 years are given below.²

Year	June.	July.	August.	September.	October.
1923	...	7.47	11.35	2.67	...
1924	11.38	6.19	3.47	12.46	0.81
1925	9.99	12.28	3.37	...	...
1926	...	14.68	22.16	10.45	...
1927	6.22	49.09	14.14	7.37	1.72
1928	5.23	12.22	11.64	4.76	1.54
1929	8.21	18.42	4.81	0.18	...
1930	4.74	39.35	10.68	3.07	1.12
1931	1.15	12.56	22.00	7.79	2.59
1932	3.27	16.82	7.01	2.90	1.76
1933	4.42	11.14	24.56	7.35	...
Average	4.96	18.20	12.29	5.35	0.86

DISTRIBUTION OF RAINFALL AS DESIRED BY THE PEASANTS

In the next table we give distribution of rainfall during different periods of the year as the peasants of the taluka would desire for the attainment of a bumper crop.

¹ Evidence Volume II. Part I, Royal Commission on Agri., page 80.

² The figures are taken from the Bombay Presidency Gazette, (Published weekly) of the respective years.

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PERIOD	INCHES	REMARKS
15th June to 22nd June	4	For sowing kharif crops, kodra, Tuer, etc.
23rd June to 27th June	0	Sunshine essential for offshoots of seedlings, for ploughing and preparing the lands for Paddy, Tobacco, Bajari and Juwar; for broad-casting Paddy and Tobacco seeds in their respective nurseries.
28th June to 6th July	8	For proper nourishment of the crops sown in the fields.
7th July to 14th July	0	Sunshine essential for the growth of crops, for ploughing and weeding purposes.
15th July to 25th July	6	For growing Bajari and Juwar and also for transplanting the Paddy.
26th July to 10th August	0	Sunshine essential for ploughing, weeding and hoeing the fields.
11th August to 25th August	7	Required for general growth of all the crops and for preparing the lands for tobacco.
26th August to 7th September	3	For transplanting the tobacco.
8th September to 10th October	6	For the growth of tobacco and other crops. This rain is also useful for the growth of rabi crops.

Total inches 34

A comparison of the two tables shows that, rainfall in the taluka was irregular in its distribution. This compels the agriculturists to perform some of their agricultural operations like the ploughing, sowing seeds, etc., over again which entails much loss of time and labour. In order to give a picture of the situation, we have appended in Appendix A at the end of this section, reports of seasonal variations in rainfall during the last six years maintained by the Taluka Development Association for Agriculture, Borsad.

DRAINAGE

For many years there has been a great need of systematic drainage in this taluka. Nearly two thirds of the taluka land is at a low level as the District of Kaira slopes downwards to Borsad Taluka. Hence during the monsoon much of the water of the District (specially from Anand and Nadiad Talukas) flows towards the villages of this taluka, flooding the fields and damaging the crops on their way. In 1892 Lieutenant Baldwin, R. E., the land revenue commissioner, visited the villages which on occasions suffered from floods. He saw that the flood water had three courses. One flow of water ran from the southern villages of Thasara Taluka, crossing a part of Nadiad and Anand talukas and entering the north west villages of Borsad. The course of the flood water is not regular and passes through Porda, Israma, Rangipura, Davolpura, Jogan, Varadala and Bamanwa. It often breaks when it enters a Baroda State territory, especially between Porda and Rangipura, Bhavanipura and Lakkadpura and Jogan and Waradala. The flow enters the Bay of Cambay half a mile off Bamanwa. The second flow rises in the neighbourhood of Sandeshar in Anand taluka. It runs towards the low lying lands of Sunav, Palaj, Amod and Pandoli. The third flow comes from Chikhodra and Anand and enters the Borsad Taluka at Napa. It runs through Dhobikui, Dhundakuva, Santokpura, Bochasan, Dabhasi, Golel, Khanpur, Saijpur and Banejada. It meets the river Mahi near the Bay of Cambay. Besides these three main flows which are running to the west of Borsad, the taluka has several small channels of water running by the

eastern villages Asodar, Anklav, Ambali, Kantharia, Bhetasi etc. These flows have no regular channels and meet one another on the way while going to the river Mahi in the south. The ravines of the river near Asarma, Amrol, Umota, Sankhiad and Kothiakhad are fully flooded during the monsoon, receiving much water from the above villages. The water generally passes through *Nalas* or small water channels generally used as cart roads. The running of water has lowered the beds of these channels below the level of the surrounding fields.

The taluka is not sufficiently provided with regular channels to carry out the surplus water easily. Drainage cuts exist but they are very apt to silt up and there appears to be no systematic provision for their maintenance. The situation has been further aggravated by the short sighted policy followed in the construction of road and railways in the taluka. In order to economise the expenses of constructing the bridges over them the cuts provided have been made too narrow. So the flows of water are checked and inundate the surrounding fields. Crops, specially the kharif ones, are greatly damaged. Complaints are made that floods wash away the fertilising elements in the soil, e.g. Nitrates and Chlorides which are held together through mere mechanical adhesion. Naturally the cultivators complained that the yield of crops decreased each year.

In 1892 Lt. Col. Baldwin proposed to construct eight main drains for the drainage of the entire *Charotar* which would secure 2,74,526 acres of land against submersion. However, the Government considered that the expenses incurred on drainage cuts would be far heavier than the benefits likely to accrue from them. The settlement commissioner of the Borsad taluka in his report of 1895 observes, "I have satisfied myself that the damage by these floods is very slight and occurs only when the monsoon is exceptionally heavy. In case a kharif crop should be submerged and spoilt, it is followed by a very superior rabi crop which more than makes up the loss".¹ It is a general belief among Government

officers that the taluka rice fields are prosperous only because of the waters reserved by the floods and if cuts provide easy channels for the water to flow out of the taluka, the rice fields would remain dry. This opinion is not wholly untrue.

The question of drainage is not an easy one. Difficulties arise from the fact that making a drain in a particular village means flooding the next village. This untoward situation cannot be avoided unless the work of drainage is taken up simultaneously in numerous villages, both in British and Native territories which are interspersed. Again, working out of a drainage scheme on a sufficiently extensive scale is too costly a business.

However, the problem is one that should not be ignored. Even if it is thought undesirable to undertake extensive schemes of drainage, the old channels should be maintained and repaired and at least, a few minor channels should be constructed in areas where they are urgently needed. Attention to such a problem is urgently necessary, if agricultural improvements on a progressive scale are to be carried out in the taluka. We might apply to our taluka the following observation of Dr. H. H. Mann. "We think, it is not too much to say that, the extent to which this work for the prevention of surface wash has been or is being done perhaps the first measure of the extent to which the village or an individual land owner, being or is progressive".¹

APPENDIX A.

We give below reports on the distribution of the rains in the taluka between 1928-29 and 1933-34.²

1928-29.

During the season the rainfall was 34.5 inches and was distributed over 60 days. It was not properly distributed though was sufficient in volume. It commenced on 10th June

¹ Land and Labour in Deccan Village, Study No. 2, page 19.

² These are maintained by the Taluka Development Association for Agriculture, Borsad.

and amounted to 4.98 inches within 4 days. Unfortunately it did not rain between 14th June and 4th July and caused great anxiety for the growth of tender germinating crops. It continued to rain from 5th July almost every day during the month, which made the transplanting of Paddy difficult. It stopped again till 20th August and then rained heavily, 8.4 inches within 4 days. This made difficult the transplanting of tobacco. Again there was no rain till 17th September and the cultivators had to transplant their tobacco by irrigation. Late rain in September washed off some flowers of Bajari. Unexpected showers between October and January also damaged Tobacco and Tuer.

1929-30.

The total rain in the season was 31.63 inches and was distributed over 46 days in the year. It commenced on 16th June and amounted to 6.58 inches within six days. This was quite sufficient for commencing agricultural operations and sowing the kharif crops. It rained only 0.31 inch between 5th August and 21st August, and people felt anxiety for their crops, specially the San crops which were to be ploughed in the fields to fertilise the land. It began to rain on the 22nd August and gave good opportunity for transplanting Tobacco. The rains stopped from the beginning of September to the end of the season. This checked to a certain extent the full growth of standing crops.

1930-31.

It commenced raining on 20th June and rained 58.96 inches in the season. It was sufficient in the beginning but rained very heavily—21 inches—in the first week of July and damaged the kharif crops. In some places the crops were resown. During the third and fourth week of August, the rain was scarce and the Tobacco had to be transplanted with the help of irrigation water.

1931-32.

It began to rain on the 15th June and amounted 46.09 inches in the season. The cultivators sowed the crops by

the break of monsoon but it did not rain for about 15 days, and they were again sown in the first week of July. It rained 6.86 inches in July. It rained 22 inches in August and seedlings of Tobacco were decayed. It rained 7.79 inches in September and 2.59 inches in October.

1932-33.

It commenced to rain on 18th June and the total rainfall of the season, 31.76 inches was distributed over 48 days. It was sufficient in June. In July it was 16.82 inches in 24 days. This retarded the growth of kharif crops and made difficult hoeing and interculturing operations. Nurseries for tobacco seedlings were made from time to time as they decayed. It rained 7 inches in 14 days in August. But owing to a lengthy break in rainfall afterwards, the standing crops suffered and transplanting of tobacco was delayed. It rained 2.90 inches in September and 1.76 inches in October.

1933-34.

The total rainfall of the season was 47.47 inches and was distributed over 45 days. It commenced on 19th June and ended on 25th September. It rained 4.42 inches in June which was sufficient in the beginning. But the crops suffered from draught till the third week of July. In the last week of July it rained 11.14 inches and the rain continued till the 14th August by which time it rained about 20 inches. So the Tobacco seedlings were decayed. The total rain amounted 24.56 inches in August and 7.35 inches in September.

CHAPTER II
PHYSICAL DESCRIPTION AND IRRIGATION
SECTION B.
IRRIGATION

We now pass on to the problem of irrigation in the taluka. The following table gives the figures of the number of wells and tanks in 72 Government villages in the taluka¹:-

Year	Wells for irrigation	Wells for drinking water	Total wells	Tanks for irrigation	Tanks for drinking water	Total tanks
1886	1700	453	2153	12	741	763
1891	1778	561	2339	12	712	774
1901	2804	615	3419	23	717	450
1911	2129	689	2818	64	705	279
1921	2429	836	3265	13	726	789
1931	Not available.					

The taluka receives its supply of water from wells and tanks. Tanks are few in number and most of them are tanks for the supply of drinking water to the cattle. They are dry in summer. Hence wells are almost the only source of water supply for irrigation. The number of wells is fairly large in the taluka which has one well for 50 acres of cultivated land on an average. Water is raised from the well by leather bag known as *Kos*. The *Kos* contains 15 to 20 gallons of water. It is drawn out of the well by a pair of bullocks which run down a steep incline. Two men are needed for the process, one sits on the rope (to which the *Kos* is attached) and drives the oxen and the other stands at the mouth of the well and empties the bag into the *Thalu* or the trough. Water is then

¹ Figures for 1886 and 1891 are taken from the Revision Settlement Report, Borsad, 1894-5; and for 1901, 1911, and 1921 from the Kaira Gazetteers of 1904, 1914 and 1926 respectively.

taken to the fields through several channels. The Kos which is ordinarily used, is known *Ramoshi Kos*. There is another variety—an automatic contrivance which empties the bag into the trough without human assistance. This is known as *Sudhia Kos*. But this contrivance is hardly used in the taluka. Besides, water is raised from the well by means of water pumps which have been installed in many villages during the last 15 years.

IRRIGATION FACILITIES AND CONDITIONS IN THE THREE GROUPS OF VILLAGES

Usually there are no hard rocky strata in the soil of all the villages of the taluka. So sinking of well is not troublesome and risky as in the Deccan where 40 per cent. of the attempts to dig wells meet with failures.¹ The people in this taluka are fortunate and they succeed in sinking wells in almost all cases. There is the usual complaint that the sub-soil water is receding. This was doubtless the case between 1915 and 1926 when the rain was scarce. People felt the shortage of drinking water during summer. But since 1927, owing to a marked increase in rainfall, normal level of sub-soil water has been attained. The water level generally recedes when it rains below 30 inches.

We now study the irrigation facilities in each group of villages in detail.

FIRST GROUP

The first group of villages contain a smaller number of wells than the second. The sub-soil water is at a depth of 45 to 55 feet. A *Pucca* (brick built) well costs Rs. 2500/- . Only a few wells are constructed or repaired yearly, want of money and fragmentation of holdings being the chief handicaps. There are small number of *Vanzara* wells² in this area.

'The deep well irrigation of the taluka requires much time

¹ Land and Labour in a Deccan Village. Study No. 2 by Dr. H. H. Mann, page 27.

² Vanzaras were the carriers of goods, from one place to another during old days when the railways were not constructed. They kept with them thousands of cattle in their flock. Wherever they camped they sunk a well for their use.

and money. Generally a *Kos* working 12 hours a day irrigates only one third of a Bigha of land. A water pump, however, can irrigate four Bighas of land within the same time. There are 41 water pumps in 16 villages of this group,¹ but they are not used to the maximum extent. The pumps belong to some wealthy cultivators who, however, allow others to use them on receipt of fees, varying from Re. 1-8-0 to Rs. 2-0-0 for an hour's use. The cultivators are disinclined to use them because they find the charges too high in these days of economic depression. Tobacco and Juwar are special crops that are irrigated by wells. Under the encouragement and advice of the overseer of Taluka Development Association for Agriculture, Borsad, rich gardens with fruit trees, vegetables and sugarcane have been raised at Davol, Vasna, Saijpur, Sunav, etc., with the help of irrigation water. Though the irrigated area at present is small, there is a tendency for it to increase steadily. The majority of the fields are irrigated by machines though bullock power is by no means discouraged.

SECOND GROUP

The villages of this group are at a lower level and are often under flood water. The sub-soil water level varies between 30 and 45 feet. The earth crust is soft. A *Pucca* well costs Rs. 2000/-. The number of pumps in the villages of this group is double to that of the first group. There are 88 pumps in 26 of the villages of this group.² Many villages like Ashi, Amod, Bochasan, Pandoli, Pimplav, Sunav, Virsad etc., have more than four pumps; but unfortunately all pumps are not fully used. Sunav water is known for its good quality and is best suited for Tobacco irrigation. In all the villages Juwar and Tobacco are irrigated with zeal and perseverance, and a large quantity of the latter is exported to Malva and Calcutta. A few Bighas of irrigated Sugarcane, Valiari, vegetables, fruit trees and spices are visible here and there. At Saijpur an enterprising agriculturist is recently experimenting in irrigated Virginia Tobacco.

¹ See Appendix B at the end of this Section.

² See Appendix B at the end of this Section.

THIRD GROUP

The sub-soil water level varies between 40 and 50 feet below sea face in this area. Here the wells are few and the majority are *Kuccha*. The nomadic character of the Kolis is a great hindrance to the developments of irrigation. Progress of irrigation requires alertness, activity, skill in intensive agriculture, and sufficient command of money. None of these qualities are possessed by the peasants of this group. A few *Kuccha* wells are sunk here and there and are scarcely used for irrigation. There are great possibilities of extending irrigation in these villages. Water pumps driven by mechanical power may be installed in villages adjacent to the Mahi from which water may be drawn. In villages away from the Mahi, *Pucca* wells may be easily dug at a cost of two thousand rupees. A *Kuccha* well costs only rupees one thousand. If the lands in this part of the taluka are irrigated, it will add considerably to the agricultural wealth of the taluka. Sufficient manure and water may enable the land to produce the best garden crops.

There are twelve water pumps in seven villages of this group.¹

NO CANAL FROM THE RIVER MAHI

The taluka has no canal. The Indian Irrigation Commission of 1901-02 recommended the construction of large canal works from the Mahi which runs along the borders of this taluka. Several times the question had been under consideration, but the Government seems to have no confidence in the success of the scheme. The river is very deep, about 35 feet below the natural surface of the country. The head-works for any canal including weir and head-regulators would be very costly, and long channels may be required, before command of the country could be obtained. Moreover, water in this river in winter and summer is too scanty and precarious to irrigate rabi crops on an extensive scale unless storage works are made in the river. Besides, interweaving of the territory of the British taluka and the Indian Native States

¹ See Appendix B at the end of this Section.

requires a thorough co-operation between the two sets of authorities before any such costly project is undertaken.

IRRIGATED LAND IN THE TALUKA

The taluka has the following amount of irrigated land in 72 of its Government villages in different years.¹

Year.	Irrigated land acres.	% of irrigated land to the total cultivated land.
1897-98	9,898	10
1903-04	7,909	8
1909-10	7,596	8
1915-16	12,060	13
1921-22	10,412	11
1927-28	9,221	7
1932-33	5,618	5

It seems from the above figures that the irrigated land had never been more than 13 per cent. of the total cultivated land in the taluka during the last 25 years. This is in part due to the poor means of irrigation² and in part to the depression in the prices of the agricultural products in a fairly large number of years.

IMPORTANCE OF IRRIGATION

The effect of the irregular distribution of rainfall is seen in low yields per Bigha in the taluka. But this yield can be easily increased by irrigation. The value of water for agricultural purposes can be well realised when one finds that the average output per Bigha in dry Tobacco is 8 maunds

¹ Figures for the years 1897-98, 1903-04, 1909-10, 1915-16, 1921-22 are taken from the Revision Settlement Report, Borsad, 1924-25.

Figures for 1927-28 and 1932-33 have been received from the Taluka Development Association for Agriculture, Borsad.

² "In Gujarat there are small tanks and wells, but the former are silting up and are unserviceable, while the latter have quite become unfit owing to the water level having gone down." R. B. D. P. Desai. Evidence before the Royal Commission on Agriculture, Part 2. Bombay. Page 316.

whereas on irrigated land the average production reaches 12 maunds. Similarly a Juwar straw, which is on an average 350 bundles on dry land per Bigha, can be produced by about 600 bundles per Bigha under irrigation. Similar increases in the production are attained in Bajari and other crops. This yield may still be increased three to four times by heavy manuring and sufficient watering.¹ Even making a considerable allowance for manuring, it is clear that, the value of water is very great. Under a fair rainfall and moisture sufficient for the requirements of crops an irrigated land grows richer crops than a dry one, though the quantity of water has to be carefully regulated. The glorious results of efforts in this direction in the Punjab, Sind, U. P. and the Deccan are visible in the prosperity of their agriculture. If the fertile regions of this taluka are well watered, their yield may compete with that of other tracts which are irrigated. The Goradu soil is pervious and is perfectly suited for irrigation to grow magnificent crops of Tobacco, Sugarcane, vegetables and other rich crops.² Only the black soil of the taluka which is known as *Kyari* is impervious. But the amount of this land is very small.

ENDEAVOURS FOR THE EXTENSION OF IRRIGATION IN THE TALUKA

People have long realised the importance of irrigation. But a further stimulus was imparted by the high prices of agricultural produce in the middle of the second decade of this century. The very high prices of Tobacco, Juwar and other crops between 1915 and 1926 tempted the cultivators to extend their cultivation. But rainfall during these years was scarce. Hence the cultivators naturally turned to irrigation and invested their wealth in opening new sources of

¹ In some of the adjoining villages in Baroda State, chiefly Dharmaj and Bhadran, we observe a produce of 30 to 40 maunds of Tobacco per Bigha under sufficient water and manure. The Taluka Development Association for Agriculture, Borsad, takes keen interest in this direction.

² "The land is very suitable for irrigation and much of the best well-irrigation in the presidency is on this Land." Soils of the Bombay Presidency. Bulletin No. 160 of 1929, page 7.

water supply. Water pumps were hurriedly installed in 49 villages of the taluka to meet the demand for water. Thus no less than 15 lakhs of rupees were invested in this branch of agriculture.¹ The sums were partly savings from business carried on by the peasants during good seasons and partly borrowing made from friends, relatives, showkars and the Co-operative Societies. The risk of such heavy borrowing was undertaken by one or two individuals. Nowhere was it undertaken on co-operative principles. So when some of the enterprises failed in lean years, the burden of the failure proved too much on the slender resources of individual entrepreneurs who were totally ruined. Several examples of this may be quoted. At some places the Co-operative Societies have been compelled to confiscate the lands and property in repayment of advances made by them to persons for the installation of pumps. The pumps worked satisfactorily up to 1926, so long as the rains were scarce and the prices of the products were high. But with the increase in rainfall after 1927 and downward movement of agricultural prices, their working expenses became relatively high and the pumps began to go out of employment.

Other factors also aggravated the situation. Fragmentation of holdings prevented the owners of pumps from adopting intensive cultivation on their own lands, as these were scattered on all sides, and they could not persuade the cultivators whose lands lay around their wells to co-operate with them. Again, the wells were often found short of water after a heavy work of two or three days. The effect of this drainage was visible even in surrounding wells where water level was gradually receding.

SCOPE FOR IRRIGATION

Let these results not discourage anybody about the success of water pumps in future. Water pump is a labour-saving machine and as such is bound to occupy its place sooner or later in the agriculture of this taluka. Water drawing by

¹ An installation of a water pump costs about 10 to 12 thousand rupees. There are 141 water pumps in the taluka. See Appendix B at the end of this Section.

animal power is by no means to be despised as it employs men and bullocks who otherwise remain unemployed. But the slow process of irrigation and comparative heavy expenses after it, renders this age old art useless from a purely economic point of view. It should be encouraged where machine power has no chance to succeed. Mr. Kumarappa says that "the possibilities of irrigating large tracts with oil pumps erected by co-operative efforts seem to us rather doubtful, as this may lead to underemployment of Ryot's bullocks which will have to be fed any case and which will have no work during watering season".¹

But we think the problem of unemployment of bullocks can be solved in another better fashion. If pumps are used to drawing water, the farmers could grow two crops where they now grow one. This would automatically create enough work both for themselves and for their bullocks which will not have to draw water from the wells. If bullocks perform these duties twice a year once in monsoon and secondly in summer, we think they would have been used to the maximum desirable extent. For the remaining days of the year they must be allowed sufficient rest to recoup their strength and vitality for the next season.

COSTS OF DIFFERENT TYPES OF IRRIGATION METHODS

For comparative purposes, we give below expenses of raising water from a well, of a water pump and an animal power, working for 12 hours a day.

EXPENSES OF A WATER PUMP

The engine is of 16 horse power with a water pipe 3 inches in diameter. The sub-soil water level is 45 feet. The pump is installed in the village Ashi.

No.	Name of the item	Amount of expenses
1	Crude oil, 14 Gallons	Rs. 5— 9—0
2	Pure kerosine oil, 1 Gallon	„ 0— 9—0
3	Lubricating oil, 1 Gallon	„ 1— 8—0

¹ Survey of Matar Taluka, page 49.

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No.	Name of the item	Amount of expenses
4	Payment to an engine driver	Rs. 1—0—0
5	Depreciation charges (of the installation)	,, 3—0—0
6	Interest on cost of installation	
	A. Engine	Rs. 3,500
	B. Pump	,, 400
	C. Fitting Exp.	,, 2,000
	D. Shed, Etc.,	,, 500
	E. Boring Exp.	,, 1,000
	F. Channels	,, 2,000
	Total Rs. 9,400	@ $7\frac{1}{2}\%$ rate of interest 1—15—4
		Total Ex. 13—9—4

EXPENSES OF BULLOCK POWER (one Kos only)

No.	Name of the item	Amount of expenses
1	Feeding expenses of two bullocks	
	A. Guwar 6 sheers	Rs. 0—5—0
	B. 25 bundles of Jowar	,, 1—8—0
2	Wages of two men	,, 1—0—0
3	Depreciation of bullocks and other materials like rope, leather bag, etc.	0—8—0
	Total Rs. 3—5—0	

A water pump irrigates 4 Bighas of land during 12 hours whereas the bullock power irrigates only one third Bigha of land in the same period.

It will be observed from the above figures that irrigation by bullocks requires twelve times as much time and nearly three times as much expenditure as pumps do to carry out the same work. The pump raises water very quickly and this will enable farmers to irrigate the land within a short time. Thus

hundreds of Bighas of land can be brought under double crops without much effort.

The monsoon lasts for only four months and there is a great scope for the development of artificial sources of water supply during the remaining months. Almost all the land except the *Kyari* can grow a second crop if the supply of water is rendered adequate throughout the year by means of irrigation works.

The existing difficulties in the way of machine power may be removed in several ways. Enterpreneurs should be supplied cheap money to sink new wells and install engines. They should be encouraged and taught to undertake such risky tasks co-operatively, so that during years of depression the burden may be shared by all. On the co-operative basis the rates charged for the supply of water are lower than those charged by a private enterpreneur. Disadvantages of fragmentation of holdings may be eliminated by the consolidation of small holdings. Difficulties of shortage of water in the well may be removed by boring operations with assistance from the Government.

APPENDIX A.

EXPENSES IN SINKING A WELL OF SIX KOS

No.	Name of the item.	Amount of expenses.
		Rs. As. P.
1	Value of land 4 Gunthas	100—0—0
2	Digging a hole of 18 feet diameter till the sub-soil water is seen (45 ft.)	60—0—0
3	Adjusting a wooden wheel in the well	100—0—0
4	Plastering the interior water portion of the well (15 feet in water) with cement and mortar	1200—0—0
5	Upward brick building	600—0—0
6	Cost of trough	400—0—0
Total cost Rs.		2460—0—0

APPENDIX E.

A table showing number of pumps in the different villages in the Taluka in 1934-35¹

GROUP I.

No	Name of the Village	No. of Pumps
1 ...	Anklav	3
2 ...	Alarsa	2
3 ...	Borsad	3
4 ...	Bodal	2
5 ...	Davol	3
6 ...	Dehmi	2
7 ...	Dhundakuva	2
8 ...	Dhobikui	2
9 ...	Dabhasi	2
10 ...	Kansari	1
11 ...	Napa (Talpad)	1
12 ...	Ras	6
13 ...	Saijpur	4
14 ...	Surkuva	3
15 ...	Vehra	2
16 ...	Vasna	3
Total		<u>41</u>

GROUP II.

1 ...	Ashi	5
2 ...	Amod	6
3 ...	Banejada	1
4 ...	Bamanwa	1
5 ...	Bhavanipura	1
6 ...	Bochasan	4
7 ...	Danteli	1
8 ...	Golal	3
9 ...	Isnav	3

¹ These figures are received from the Taluka Agricultural Development Association, Borsad.

No.	Name of the Village	No. of Pumps.
10 ...	Israma	2
11 ...	Jesarva	1
12 ...	Jantral	3
13 ...	Jogan	1
14 ...	Khanpur	6
15 ...	Lakkadpura	2
16 ...	Palej	3
17 ...	Pandoli	6
18 ...	Pimplav	5
19 ...	Rangipura	4
20 ...	Rupiapura	2
21 ...	Sunav	8
22 ...	Santokpura	1
23 ...	Varadala	2
24 ...	Virol	3
25 ...	Virsad	10
26 ...	Vadeli	4
Total		<u>88</u>

GROUP III.

1 ...	Badalpur	...	1
2 ...	Gajana	...	1
3 ...	Amiad	...	3
4 ...	Kathol	...	1
5 ...	Kanbha	...	1
6 ...	Khatnal	...	2
7 ...	Vatra	...	3
Total			<u>12</u>

CHAPTER III

PROBLEMS OF SOCIAL LIFE IN THE VILLAGE

SECTION A.

CASTE SYSTEM

IMPORTANCE OF THE STUDY OF SOCIAL PROBLEMS

Economic life of a man is closely associated with his social status and religious outlook. Prof. Radhakamal Mukerjee observes that social and economic problems can never be separated in an Indian village.¹ The close relation between the two may be observed in the dependence of the rate of interest charged to a person upon his social status. We may notice that some of the special qualities required for economic enterprise like initiative, intellectual alertness, powers of shrewd observation and foresight are observed only among a group of persons and are wanting in others. These characteristics may in part be acquired by self-culture. But in part and probably to a large extent, they are inherited and traditional within particular classes or sections of society.

THE CASTE SYSTEM

Herein lies the importance of caste system. One can fairly well tell the efficiency of a peasant in the taluka, selected at random, if he knows the caste to which the latter belongs. The system breaks up the common life of the village into a number of group lives, each with its distinctive heritage of skill and social function, and determines more or less the place of an individual in the general scheme of society.

"A caste is a collection of families claiming a common descent and bearing a common name which usually denotes a specific occupation".² Each caste is believed to be sanctioned by religion. It has its own rules for marriage, for dining and for the conduct of the profession of its members.

¹ Foundation of Indian Economics, page 60.

² Census Report of India 1911.

During the initial stages, the system must have been elastic, permitting inter-marriages and easy passage from one group to another; because it was thought to be based on the principle of social selection and division of labour rather than on the heredity.¹ Later during settled state of society the continuous performance through several generations of some functions by the members of a caste made the caste division hereditary.²

Originally there were only four castes. They were Brahmins, Kshatrias, Vaishyas and Sudras. Additions of sub-castes under major castes have been made since time immemorial and the whole process must have been stimulated by the great mixture of the foreign with the Aryan elements in the population of Gujarat.³ The result is that there are to-day no less than 40 castes in the taluka.

BASIS OF OUR CASTE CLASSIFICATION

The Census Report of Baroda State for 1931 has classified the castes in the State into nine large groups, seven of which consist of Hindu, Jain, and Tribal castes. The Muslims form the eighth group. The rest of the population is lumped together in the ninth group. These groups are rearranged into five main classes according to the level of their culture. The scheme of classification is given below.

¹ Indian Economics. By Jathar and Berri, page 94.

² Wealth of India. By Wadia and Joshi, page 124.

³ "A large sea board which Gujarat including Cutch and Kathiawar possesses, has from very ancient times attracted for the purposes of refuge, trade and conquest a large number of foreigners from Arabia, Persia and Africa. This foreign element received large additions during the centuries before and after Christian era from hordes of Central Asia, Kushans, Hunes and other tribes." Hindu Families in Gujarat. By R. B. G. H. Desai, page 177.

No.	Name of the Class	Name of the Group
1	Advanced Class	A. Brahmin B. Bania C. Patidar
2	Intermediate Class	A. Baria or Kolis B. Artisan
3	Illiterate Class	A. Raniparaj B. Depressed
4	Muslim	A. Muslim
5	The rest	

In our classification of the castes in the Borsad taluka, we shall abide by the above scheme. The classification of the castes in the Census Report of the Bombay Presidency, 1931, is not as helpful as the Baroda one. In the first place, its classification relates to the whole of the Bombay Presidency. And, the caste divisions in the different major sections of the Presidency are not exactly the same. Secondly, the Bombay Census puts Patidars and Kolis in the same sub-class, namely intermediate classes among Hindus. But while there may be exceptions in general, socially and intellectually, the Patidars in our taluka, certainly belong to a higher stratum than the Kolis. Thirdly, the arrangement of caste in our taluka is not different from that obtaining in Baroda State which adjoins and often runs into our taluka. We shall accordingly make use of the Baroda classification.

Separate census figures of different castes in the taluka are not available for 1931. However, a classification of the population by castes is available for the Census years 1901, 1911 and 1921 for 72 Government villages. The following table gives the percentage distribution of various castes in the taluka in the three years mentioned.

No	Name of the Group	1901. % /o	1911. % /o	1921. % /o
1	Brahmin	4	4	3
2	Bania	3	1	1
3	Patidar	27	22	20
4	Baria or Kolis	47	57	25
5	Artisan	4	3	2
6	Raniparaj	3	3	—
7	Depressed	6	6	44
8	Muslim	2	1	1
9	The rest (Christian)	4	3	4
	Total	100	100	100

A comparison of the figures of the three years suggests that the caste classification of the population cannot be very reliable. For example, the percentage which depressed class people formed of the total population increased from 6 to 44 between 1911 and 1921. This could not have been due to the internal growth of the depressed classes. It must have been caused by a transfer of people recorded as belonging to other castes in 1901 and 1911 to the category of depressed classes at the 1921 Census. The percentage figures of Barias again show violent changes.

For 1931, I selected three villages Anklav, Nisaraya and Vasna to represent the whole taluka. Anklav is an important marketing village with a population of about four and a half thousands representing all the castes in the taluka. Nisaraya is considered by the Agricultural College, Poona, to be a representative village of the taluka. Vasna with a population of about twelve hundred persons represents small villages.

The following table gives the distribution of various castes as percentages of the total population in the three villages mentioned, in the year 1931.

PROBLEMS OF SOCIAL LIFE IN THE VILLAGE 65

No.	Name of the group of castes	Anklav %	Nisaraya %	Vasna %	Percentage to the total population of all three villages
1	Brahmin	4	10	1	5
2	Bania	5	—	0·4	3
3	Patidar	24	21	54	28
4	Baria	42	45	24	38
5	Artisan	8	10	6	9
6	Raniparaj	2	—	1	2
7	Depressed	12	14	13	13
8	Muslim	3	—	0·6	2
9	The rest	—	—	—	—
Total		100	100	100	100

We think that the percentage figures in the above table in the last column of distribution can be taken as representative of the castes in the taluka.

We now combine these various castes into the five main classes of the scheme that we have adopted. The following table gives the percentage of distribution of the main classes of the total population in 72 Government villages of the taluka in the years 1901, 1911 and 1921.

No.	Class	1901 %	1911 %	1921 %
1	Advanced	34	27	24
2	Intermediate	51	60	27
3	Illiterate	9	9	44
4	Muslim	2	1	1
5	Rest	4	3	4
Total		100	100	100

The following table gives the percentage distribution of the classes of the total population in the three villages Anklav, Nisaraya and Vasna, in the year 1931.

No.	Class	Anklav %	Nisaraya %	Vasna %	Percentage to the total popu- lation of the three villages
1	Advanced	33	31	55.4	36
2	Intermediate	50	55	30	47
3	Illiterate	14	14	14	15
4	Muslims	3	—	0.6	2
5	Rest	—	—	—	—
	Total	100	100	100	100

The percentage of distribution of the main classes of castes in the last column of the above table can be taken as representative of the taluka in 1931.

POPULATION ACCORDING TO CASTES IN ANKLAV, NISARAYA AND VASNA.

The following table gives a detailed account of the castes in the three villages, Anklav, Nisaraya and Vasna in 1931 according to our scheme of classification.

Population Figures of 1931.

No.	Class	No. Group	No. Caste	Anklav	Nisaraya	Vasna
1	Advanced	A. Brahmin	1 Barot	10	178	—
			2 Gosai	60	—	—
			3 Brahmin	80	18	12
			4 Soni	1	—	—
			5 Gorji	11	—	—
			Total	162	196	12
	B. Bania		6 Bania	200	—	—
			7 Luvana	12	5	6
			Total	212	5	6
	C. Patidar	8 Patidar		1,105	421	660

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Population Figures of 1931.

No.	Class	No. Group	No. Caste	Anklav	Nisaraya	Vasna
2 Intermediate						
	D. Baria	9 Anjana				
		Rajput	24	502	—	
		10 Khara				
		Rajput	40	—	—	
		11 Patan-				
		wadia	300	183	171	
		12 Baria	1,100	109	120	
		13 Garasia	475	—	—	
		Total	<u>1,939</u>	<u>794</u>	<u>291</u>	
E. Artisan						
	E. Artisan	14 Barber	60	53	19	
		15 Bhoi	62	49	15	
		16 Bajania	—	25	9	
		17 Daraji	17	—	—	
		18 Dhobi	3	9	—	
		19 Gola	50	—	—	
		20 Kalal	5	—	—	
		21 Kumbhar	76	30	13	
		22 Luhar	10	12	5	
		23 Mochi	70	—	—	
		24 Mali	3	—	—	
		25 Ode	3	—	—	
		26 Ravalia	6	—	—	
		27 Salat	—	14	—	
		28 Suthar	29	9	11	
		Total	<u>394</u>	<u>201</u>	<u>72</u>	
3 Illiterate						
	F. Raniparaj	29 Rabari	6	—	—	
		30 Sadhu	2	1	9	
		31 Vaghari	50	9	4	
		32 Chua				
		Vaghari	40	—	—	
		Total	<u>98</u>	<u>10</u>	<u>13</u>	

Population Figures of 1931.

No. Class	No. Groups	No. Caste	Anklav	Nisaraya	Vasna
G. Depressed	33	Bhangi	60	62	13
	34	Chamadia	60	12	—
	35	Dhed	405	234	146
	36	Dhed G-	—	—	—
		roda	8	—	—
	37	Dhed	—	—	—
		Sadhu	2	—	—
	38	Turi	6	—	—
		Total	541	308	159
4 Muslim	H. Muslim	39 Fakir	30	—	—
		40 Turki	—	—	—
			10	—	—
		41 Saiyad	35	5	8
		42 Saiyad	—	—	—
			18	—	—
		43 Suni	—	—	—
			48	—	—
		Total	141	5	8
		Grand Total	4,592	1,940	1,221

OBSERVATIONS ON CASTES IN THE VILLAGES

It will be seen from the above table that 14 castes are to be found in all the villages. They are Brahmins, Luvanas, Patanwadias, Barais, Barbers, Bhois, Kumbhars, Luhars, Suthars, Sadhus, Vaghris, Bhangis, Dheds and Saiyads. The other castes reside only in those villages where they are sure of their means of livelihood. They are found only in the market towns. Naturally, the bigger the village the greater the number of castes. Whereas there are 41 castes in Anklav, there are only 21 in Nisaraya and 16 in Vasna. The intermediate class is the most numerous in all the villages. The advanced class come second and the illiterate class the third.

¹ The population figures of Anklav, Nisaraya and Vasna were received from the village Talati, Anklav, the Nisaraya Village Report, published in 1934 and from the Taluka Development association for Agriculture, Borsad, respectively.

Muslims and persons belonging to the rest class are very few in the taluka. The percentage of all castes exclusive of Patidar, Dharala and Dhed is 23 per cent. in Anklav, 20 per cent. in Nisaraya and 9 per cent. in Vasna. Generally speaking the more varied the economic life of places, the larger the percentage of other castes. Anklav is a railway station and a big marketing centre; Nisaraya and Vasna are neither, nor do they offer special facilities for employment.

We now pass on to a consideration of the chief castes especially those engaged in agriculture which is of course, the main occupation of the people of the taluka.

AGRICULTURAL POPULATION IN VILLAGES

The agricultural population in the above three villages is given below.

No.	Name of the village.	Total Population.	Agricultural population.	Percentage of the Agri. Population to the total
1	Anklav	4,592	3,691	80
2	Nisaraya	1,940	1,743	89
3	Vasna	1,221	1,143	93

In all the three villages agriculturists formed a very high proportion of the total population. But their relative strength varies, being highest in the small village of Vasna and lowest in the market town of Anklav. Villages away from a railway station or devoid of marketing facilities specially those along the bank of the Mahi, are mainly rural, the agricultural population being more than 90 per cent. as they cannot offer facilities for employment to the non-agriculturist castes.

AGRICULTURAL AND NON-AGRICULTURAL CASTES

The following 11 main castes are engaged in Agriculture:—Patidars, Rajputs, Patanwadias, Barias, Barots, Gosais, Bhois, Barbers, Vaghris, Garasias, and Dheds. Of these, the Patidars, the Barias, including Patanwadias, Raj-

puts and Garasias and the Dheds form more than 80 per cent. of the total population in the village.

Some Brahmins, Banias, Artisans and members of other castes are engaged in cultivation of land. But it has been thought advisable to exclude them from our study for several reasons. Firstly, they are few in numbers. Secondly, they carry on agriculture as a subsidiary source of income rather than as their chief occupation. Thirdly, they are induced to plough their lands because they own them under gift or mortgage. They never keep bullocks or any agricultural implement with them. They hire cattle and implements from other agriculturists, specially the Dharalas and Burias. Their method of cultivation is neither special nor highly efficient.¹

STUDY OF IMPORTANT AGRICULTURAL CASTES

We shall now briefly study the social and economic position of the Patidars, the Dharalas and the Untouchables who form the three main agricultural castes in the taluka.

THE PATIDAR

ORIGIN AND HISTORY

The Patidar (means a sharer in the land of the village), is a skilful cultivator. He claims to be of Kshatriya race who came down to Gujarat from North India during the sixth century.² They defeated the Kolis and other aboriginal

¹ The Brahmins were invited in Gujarat by King Mularaj in 961 A.D. to help him in his performance of sacrifice. They were then, induced to stay at Borsad and elsewhere, by free gifts of land and money. Those who settled at Borsad are still known as Borsada Brahmins.

The Banias possess land because they are shrewd money lenders. Much of their land has been taken from their debtor peasants in lieu of money payments due to them.

Artisans like the Suthar, Barber, Potter, Blacksmith, etc., have received village lands for the services which they render to the village communities. These lands are known as *Pasaita* lands.

² "It is said that Kanbis (Patidars) belong to a great conquering white Hun tribe of Gujjars who during the sixth century came to Gujarat through the Punjab, Malwa and Arwalli Hills." Gazetteer of the Bombay Presidency. Hindu Population, page 164.

tribes and settled on the more fertile lands of Gujarat. They retained their hold over the villages, specially till the advent of the Marathas in the 18th century. The Marathas had a ruinous Land Revenue System of farming out districts and villages to oppressive and hard-hearted casual revenue collectors. Consequently, many villages were deserted by the patidars and the new cultivators (belonging to different castes) usurped their rights. "This was the case in Surat where powerful Desai farmers contrived almost everywhere to oust the old Patidars and to divide the villages amongst themselves, as their property. But in villages, especially in Broach and Kaira, the Patel proprietors succeeded in retaining the management of their villages, meeting the oppressive taxes under invention of *Narwa* or *Bhagdari*".¹

This system of farming out of revenues led to the formation of unions among the patidars of the villages. These villages are divided into *Kulia-Akulia*. The Narva villages are known as *Kulia* (or men of one family) as against the rest *Akulia* (or men of no family). There are 39 Narva villages in the taluka. Except the villages along the bank of the Mahi or those of the third group, nearly all are inhabited by patidars who exercise direct or indirect control over the village politics. The patidars constitute about 28 per cent. to the total population in the taluka.

HIS POSITION IN THE VILLAGE

The Patidar owns much of the land of the village. He enjoys a unique position in the administration of the village; and is respected both by the people and the State. The State maintains his credit and does not usually interfere with his

The same gazetteer further notes, "According to one story, they are the descendants, and according to another, they are the followers of Lav and Kush, the children of Ram, who were driven out of Ayodhya and settled in Muttra; and again forced to move passed through Marwar into Gujarat. Their arrival in Gujarat is supposed to have taken place about 2,000 years ago. They seem to have originally settled in the lands between the Sabarmati and the Mahi. This is the Kanbi's pleasant land or *Charotar* and to its families the other Kanbi's yield a specially high social position."

¹ Narvadari and Bhagdari Tenure, by D. N. Patel, page 4; for a detailed description of the system, vide Chapter 10 on Land Revenue.

social predominance. Many of the village head-men or Mukhis are chosen from Patidars. He lives in a well built Pucca house. He owns a good deal of property in the form of land, cattle and ornaments. He is better fed and better clothed than other peasants. He is able to meet expenses on account of marriages or death either from his savings of the good year or from loans taken from showkars who always consider advances to him as sound investment. He patronises the village artisans, Strolling Players and Bhats (bards).

CHARACTERISTICS

The Patidar is considered remarkably intelligent and skilful in the pursuit of agriculture.¹ Even if he is illiterate, he is fully acquainted with the conditions and problems of his profession. He knows the details of weather changes, character of the monsoon, qualities of his manure; he understands fertility of his land, usefulness of good implements and of well bred cattle. He knows what crops can best prosper on a given soil. He knows the advantages of rotation of crops. He knows when to plough and how to plough. He observes a wonderful regularity in the performance of all agricultural activities.

He is courageous though, sometimes rash. He would attempt and dare anything that captures his mind. He played a leading part in the last Satyagrah movement and sacrificed his lands and belongings for the cause in which he believed. Till recently despite better inducements from outside, he could leave his home only at the risk of social degradation. But now he migrates outside the district (of course, not in the villages of the taluka) and still maintains his family pride and social standing. During the last 40 years many Patidars have migrated to distant lands like Fizi, Africa and elsewhere, from almost each and every village in the taluka.

¹ "The Patidars come first as persistent, careful, thrifty and intelligent cultivators. They sink large amount of capital in wells and agricultural stock and their methods would make them successful anywhere. With the rich soil of Kaira at their command, they are a wealthy class, but in this respect they stand almost alone." Statistical Atlas of the Bombay Presidency, 1906, page 67.

Many a Patidar has turned out successful as businessman, legal and medical practitioner or as Government Official. The rapid spread of education and consequent apathy to work in the field together with successive failures in agriculture may perhaps be stimulating migration. The magnificence of Sunav, a beautiful village in the North East, equipped with the latest conveniences of water supply, school and library, has been built up with the large earnings of its emigrated sons. Virsad adorned with fine buildings, school and library owes its development to its Amins (a superior class of Patidars) who have settled in Bombay and elsewhere. Other Villages like Borsad, Pandoli, Ashi, Pimplav, Palaj etc., have also been enriched by the earnings of their emigrated Patidars.

Social :—It is unfortunate that being an agriculturist and depending for his livelihood upon the bounties of nature, a Patidar sticks to ruinous old customs and manners. His savings were largely spent on marriage and death feasts. At the marriage of his daughter he has to give a good dowry, and entertain for two days the party of the bridegroom. Similarly, it was formerly a custom that he should give a feast to the whole village when a member of his family dies. According to the village tradition the status of a family was tested by the amount of expenditure incurred on the death feast. The curse of the custom was that even the poor had to follow their rich neighbours and hence mortgaged their property, in order to get applauses from the people.

But now, spread of education and social propaganda have enlightened the people and made them realise their past folly. Some people have come forward to defy the old customs but are still handicapped by ignorance and illiteracy among other members of the community. However, there is a great feeling in the taluka against death feasts and in favour of reduced expenditure on marriage ceremonies. Before the Child Marriage Restraint Act of 1929, child marriages were common among the Patidars; but there are few such cases at present as the objective of the Act is well appreciated.

Patidars are not allowed to give their daughters outside particular groups even in their own community. This system

is prevalent in most communities in India. The important section of the community of Patidars resident in the Kaira District, is known as the *Levas*. They have no connections either social or economic with the *Kadva* Patidars of Ahmedabad and Surat.

The *Leva* Patidars of the taluka are divided into different groups for the purpose of marriage. A group is known by the name of *Ekada* and there are *Ekadas* of 12 villages, 22 villages and 14 villages. There are some villages which have not formed groups. These *Ekadas* have their own rules and regulations, breach of which is met with a heavy fine. There is no common rule against widow re-marriage. In the group of 12 villages whose Patidars are considered kulin, the restraint is almost absolute; whereas amongst the rest, it is allowed by custom. Notions of prestige, however, have come in the way of this reform.

The women folk are more or less under the curse of purdah system which has deprived them of the freedom in social life. The higher the social status of a family the more strictly the purdah observed, e.g. the women of kulin Patidars never go out to fetch water from the village tank or a village well. Apart from its many drawbacks, the purdah system has limited the family labour in the field and enhanced the cost of production of crops. It affects adversely the health and efficiency of future generations. Female education is mostly neglected.

Religious :—The Patidar is a Hindu by religion. He is either a Vaishnav, a Ramanuj, a Shaiv, an Aryasamajist or a Jain. Whatever he may be, he is tolerant and respects other religions. He believes in omens and signs. He observes Hindu fasts and feasts and occasionally goes on pilgrimage to Dakor, Dwarka or Ambaji. He worships his favourite God before undertaking any work like the sinking of a well, first ploughing, opening a new house or enjoying a feast.

Conclusion :—It can be said of a Patidar that if he once realises the usefulness of a particular thing, he would try to incorporate it into his mode of life. He adopts himself to environments as circumstances require. But the great need in the community is the spread of education. The highly

educated persons have adopted modern conditions of life, but others are behind hand. A time will come, when we hope, the whole community could take its proper share in the progress and development of the country and its agriculture.

DHARALAS AND KOLIS

SETTLEMENT AND HISTORY

If Patidars are the chief proprietors of land, the Dharalas and Kolis are the chief tenants in the taluka. They are supposed to be the descendants of primitive and aboriginal tribes of the hills and forests. Kolis are inferior to Dharalas or Barias in social status, for the latter claim a Rajput descent.¹ They constitute nearly 38 per cent. to the total population in the taluka and are scattered all over the area. However, they are chiefly found in villages along the bank of the Mahi. They have highest percentage of population of all castes in the taluka.

CHARACTERISTICS

Social :—Before the advent of the British rule, they were a race of marauders and plunderers. Till the last decade, they were a menace to the peace and prosperity of the people who would not safeguard their standing crops, grazing cattle and seasonal fruits of the trees. They were much feared, lest they turned out-laws on the slightest provocation. Babar Deva, a Dharala by caste, was a notorious dacoit in this taluka. He plundered many villages, killed many people and kept in terror the whole peasantry for about a decade from 1916 to 1924. He often took shelter in the impenetrable ravines of the Mahi and evaded arrest for long until he was caught by the Baroda State Authorities. The expenses of the Government pursuits rose to such an alarming extent, that the Government imposed a "Haidia Vero" or the punitive police tax

1 "Dharalas claim a descent from a Parmar Rajput of Dharanagari in Malwa, who married the daughter of a Bhill chief in Gujarat to secure his help.... The surnames Baria, Chavda, Gohel, Parmar, Rathod, Solanki, Vaghela etc., are Rajput surnames and bear a truth to the statement." Gazetteer of the Bombay Presidency, Hindu Population, page 243.

on the people of the taluka. The tax however, was vehemently opposed and was withdrawn after two months. Naturally the Government took strong action against the community. The taluka is considered the most criminal in the whole district and a special first class Magistrate Court is established at Borsad.¹

Economic :—Of late years, there has been a great improvement in the ways and habits of the people. They have generally become more settled and have steadily taken to agriculture. But they are thriftless and improvident and as cultivators inferior to Patidars. They conduct their agricultural operations in the most slovenly and unremunerative manner possible, being quite content if their fields yield sufficient grain for them to subsist for a few months and enable them to contract fresh loans from the village showkar. In the hot weather, unripe mangoes and Mahura berries form their staple food. With a little foresight and energy, they might cultivate the fields with success. They are strong and can work hard. But they are too lazy to work at the proper season and are satisfied with a hand to mouth existence.

Their standard of life is low. Their food is very cheap. Their huts are simple and muddy. Their clothes are coarse and few. They waste their time and money on gambling, and drinking. Some of them are addicted to opium. There is a good deal of indebtedness amongst them and most of them are in the showkar's hands to whom much of their land is mortgaged.

A Dharala is a Hindu and believes in ghosts and witches. He is mostly an illiterate. Polygamy is prevalent among the community. Child marriages are still common in spite of the Sarda Act. Widow re-marriages and divorces are frequent.

¹ Certain suspects and habitual offenders belonging to this caste are required to give parol every evening. The defaulters are taken severe notice of. About a decade ago, there was a move on the part of the Government to transport the whole community to a safe hilly place in the Deccan.

UNTOUCHABLES

The untouchables are known as Dheds, Bhangis and Chamars in the taluka. They belong to the depressed classes. Dheds are commonly agricultural labourers; the Bhangis are the village sweepers and the Chamars tanners of leather and carriers of the animal corpses. The last two classes are thinly scattered over the taluka villages according to local requirements. Some villages often do not contain them. According to the figures published in the "Harijan Sevak Sangh Report", Borsad, 1935, the total Harijan (Untouchable) population in the taluka is 22,530 or about 15 per cent. of the total population in the taluka. Of the total Harijans, 13,864 are Dheds, 5,292 are Bhangis and 3,374 are Chamars.

CHARACTERISTICS

Economic :—The Dheds seldom own private land. Except a few who are weavers, all are agricultural labourers. Their services are solicited by rich and poor farmers during the busy seasons. They are employed in cleansing, fencing and manuring fields and in weeding, cutting and harvesting of crops. Their wage rates differ according to the character of work, the capacity of the labourers and the intensity of the demand for work. Women and children are paid lower than male adult.¹ For about six months, they work in fields. During off seasons (generally in summer) they (the whole family) migrate to bigger villages and cities in the neighbourhood like Petlad, Anand, Baroda and Ahmedabad, in search of odd jobs. They find employment in ginning factories in spinning and weaving mills, and also in brick making karkhanas (factories). They are industrious and hard working. The average annual income and standard of life of a Dhed family is very low. Their huts are simple, and built of mud. They can adjust their standard of life to unprecedented changes in their income. This of course is the chief reason, why they get job easily. Often they are asked to give free services or *Vetks* to higher classes under threats of severe punishment. They borrow money for marriage,

¹ For a detailed description of the system vide chapter 8.

death feast and other purposes on a *Khandha* system¹ at a rate of about 30 to 40 per cent. per annum. This system has naturally impoverished them in spite of their frugal habits and hard work.

Social :—The Dheds are the most down trodden of all the agricultural classes. They are God-fearing, meek, simple and honest and yet excluded from our so-called society. They are inhumanly treated and humiliated at each and every step. Even public wells, tanks, schools, libraries, temples and dharamshalas are not open to them. They live on the outskirts of the villages. Child marriage is common among them. Widow re-marriage is allowed. As they live in insanitary places and are poorly fed, they are weak in body. They are illiterate. They are mostly Hindus. But during recent years about 43 per cent. of them have become Christians under the persuasion of the Irish Mission at Borsad.

MISSIONARY WORK FOR THEIR WELFARE

Three important institutions are working in the taluka for the welfare and uplift of this class. The first is the *Antyay Ashram* at Bodal, established in 1924 and conducted by the Gujarat Prantic Samiti, Ahmedabad. It is a free boarding and lodging academy, exclusively meant for the children of Harijans. It supplies free medicines to the poor and carries on a propaganda for the removal of Untouchability. The second is the *Irish Mission* established in 1870, first at Dehvan and then at Borsad. It supplies medical facilities, opens schools for the spread of education, teaches decent ways of living and arouses consciousness among the untouchables of their down-trodden social position. Of course, its main aim is to convert the Harijans into Christianity. The third is the *Harijan Sevak Sangh* at Borsad, established in 1933. It aims at social, moral and economic uplift of the depressed classes and at educating public opinion in favour of removal of Untouchability. These efforts have improved the conditions of untouchables to some extent and swayed

¹ For a detailed description of the system vide chapter 8.

public opinion against the inhumanity of untouchability, but still much remains to be done.

VILLAGE ARTISANS

It is difficult to understand the village economy unless we study the important part played by the artisans, the blacksmith, the carpenter, the barber, the shoemaker, the potter, the oil-presser and the Chamar. If the village agriculturist grows crops, he is helped in his various social and agricultural activities by these artisans. The blacksmith makes iron implements and mends them when necessary. The carpenter prepares wooden tools. The barber is in the small village also to some extent the village surgeon. His wife is considered proficient in the art of midwifery and acts as *Dai* or nurse during the pregnancy of the cultivator's wife. The mochi or the shoemaker makes shoes, leather strings, ropes and leather bags for drawing water from the well. The ganchi presses the oil seeds. The potter supplies the earthen vessels and granaries. For all these services the artisans are paid partly in cash and partly in grain.

INFLUENCE OF THE CASTE SYSTEM ON THE ECONOMICS OF AGRICULTURE IN THE TALUKA

This detailed study of the three main agricultural castes in the taluka will now make it easy for us to realise the influence of the caste system on its economic life.

Firstly, the system is based upon the principle of division of labour which has been extolled by the economists as the foundation of economic prosperity. It allots to each caste a special function in the village economy and the collective life of the village is built upon the co-operation of the various castes. Needless to say the self-contained village units succeeded amazingly in the past.

Secondly, it fixed the hereditary occupation for each man and saves him the anxiety of choosing his occupation. This has led to the stability of the society and to the contentment of its members. The system provides an easy arrangement for training in the different village occupations. The son of

a peasant or artisan becomes proficient in the family occupation with little efforts.

Thirdly, the system has developed co-operation among the members of a caste—an end which we seek to foster through modern co-operative institutions. It is often observed that when a member has to perform either a social or a religious ceremony such as marriage or a death feast, his caste fellows zealously work for him and help him in a variety of ways. Thus, in marriage, logs of wood are cut and brought home from fields for fuel, beds are collected from other homes for the use of the invited guests and a marriage mandap is constructed by the male members belonging to the same caste. The female members cleanse and grind the grains and prepare the sweets. The village servants also render their services, e.g. the barber conveys the message from one village to another, besides his professional duties. The potter supplies the necessary earthen vessels, the carpenter the decorated wooden *Bujath*, the blacksmith the iron lamp (*Raman Divo*) and the mali (gardener) the flower wreathes. The *Revalias* beat their drums and blow the pipes. The *Vagharris* cleanse the vessels and the floor of the dining hall. A part of the marriage expense is collected from caste fellows under an antique custom of *Chanla* according to which every relative or friend contributes a rupee or more.

Fourthly, "segregation of individual castes or group of castes in a village is the most obvious mark of civil privileges and disabilities",¹ and it prevails in a more or less definite form in all the villages of the taluka. Generally in a village, the central place is occupied by the superior castes like the Brahmin or the Bania. Next comes the Patidars. The Dharalas, the Rajputs and the artisans reside on the borders of the village. At the farthest outskirt live the depressed classes. Thus different castes occupy different sections of the village site. This strengthens of course, the bond of union among the members of a caste and helps them to safeguard their mutual interests. The fundamental reason of this ségrégation

¹ Caste and Race in India.

gation of castes is that the members of different castes can neither drink nor dine together. Again each caste has a different social status and a person of superior status would not stay with a person of an inferior one. Status of a person depends not on his wealth or intellect but on the traditional importance of the caste in which one had the luck of having been born. Thus though Patidars, Rajputs and Dharalas are all cultivators, the Patidars enjoy the highest status.

Fifthly, the caste system provides each caste with caste unions which render beneficial services to the people. The Union keeps vigilant watch over the conduct of its members and manage the caste funds and institutions. It sometimes regulates the economic activities of its members, like the rates of interest, wages of the labourers etc. Till recently, it exercised wide influence over its members and could enforce its decisions as the law of the land without Government interference. But its influence is nowadays on the wane. It has not kept pace with the development of things, has grossly abused its power and has necessitated the Government to interfere with its activities.

Principle of strict endogamy is the sixth important feature of the caste system. A person belonging to one caste is not allowed to marry a girl of another caste. This principle has been extended even to the sub-divisions within a caste. The strict adherence to this principle has deteriorated the racial stocks and has created an excess of males over females in certain cases and deficiency in others.

Seventhly, the system has prevented migration of labour and capital from one place to another. A Patidar migrating to another village is known by an obnoxious and inferior term "Kanbi" and is looked down by his caste fellows. Prof. Jathar and Berri rightly point out that the system is antagonistic to equality. It injures the higher as well as the lower classes. It breeds in the former a false and distorted sense of superiority (as in the Patidars) and in latter a mental attitude fatal to the development of self-respect as in the untouchables. The system has made more or less the income and the standard of life inelastic. It is true that in our villages we

do not have to ask a man's occupation, we have only to know his caste or his religion and we know his economic position.¹

Conclusion:—In spite of its many advantages the caste system has obviously played an important part in suppressing the natural aptitude of its members for social, religious and economic progress. Hence, we think that, efforts should be made to abolish the caste system and to place all people on equality. The task is very difficult and is not likely to succeed within the near future. But attempts should be made by gradual steps, first by merging sub-castes into major castes and the latter ultimately into one caste only. The advantages of present caste system could be secured by varying forms of co-operation. Of course, differences of culture and traditions inherent in different sections play an important part in dividing a community. But with the spread of education both among males and females, these differences would be minimised and the community would become one single society. The trend of civilisation to-day is to secure to all individuals as far as possible equal opportunities in life. Many Indians who are highly cultured and educated make no distinction between communities. Inter-marriages have been taking place very often among such people. It is education and training that should make a man what he wants to be and not the caste. We hope a time will come when persons belonging to different castes will forget their differences and will be merged into one caste and will be proud to call themselves by one name *Indian*.

JOINT FAMILY SYSTEM

The Joint Family System is the most outstanding feature of Hindu society and forms the basis of juridical notions of Hindu Law. It is a survival from an age when among the ancient Aryan communities, the primary social unit was the family. Such a family system being founded on communistic principles has far reaching effects on the economic life of a people.

¹ From an article "Rural Research in Tagor's Shantiniketan", by Hashim

The following table gives the total number of persons in the family and the percentage of such families to the total number of families in each group of the taluka. The percentage figures are given within brackets.¹

Total number of persons in the family	Number of families in		
	Group I Villages	Group II Villages	Group III Villages
1	2 (1)	—	—
2	5 (3)	6 (7·5)	2 (4)
3	15 (10)	6 (7·5)	12 (22)
4	21 (14)	13 (16)	10 (18)
5	16 (10)	8 (10)	10 (18)
6	24 (16)	14 (18)	7 (12)
7	22 (14)	10 (13)	3 (5)
8	16 (10)	6 (7·5)	7 (12)
9	11 (8)	6 (7·5)	3 (5)
10	4 (3)	1 (1)	—
11	7 (5)	2 (2)	—
12	4 (3)	4 (5)	—
13 and above	5 (3)	4 (5)	2 (4)
Total	152 (100)	80 (100)	56 (100)

According to our inquiry, an average Patidar family in the first and second group contains six members (the cultivator, his wife, three children and one old person in the house) and an average Dharala family in the third group has five members (the farmer, his wife, two children, and an old man). Among the Patidars in the first and second group of villages 54 and 57 per cent. of the families consisted of 4 to 7 members each. Among the Dharalas in the third group the corresponding percentage was 48. Again the Dharalas seem to have proportionately fewer families containing more than 6 persons each than the Patidars. This leads us to the conclusion that in general the Patidar household is bigger than that of the Dharala. But this is most probably due to the fact that the Joint Family System prevails to a larger extent among Patidars or high caste people than among Dharalas.

¹ The above table has been prepared according to the figures which we had collected during our inquiry.

or low caste people rather than to higher fertility of the farmer. The young Dharala, when he marries, generally leaves his parent's home and sets upon his own. He expects to inherit little from his father and the costs of living separately are low for him.

The normal condition of a Hindu Joint Family in the Taluka is jointness in estate, in food and worship. The family ordinarily consists of all the descendants in the male line of a common ancestor, their wives and unmarried daughters. In such a system, the income earned by each member is thrown into a common stock which is drawn upon to meet the different needs of individual members. Everyone earns according to his capacity and receives according to his needs. The system has taught selflessness, self-discipline and obedience to elders. It has protected the old and infirm from starvation and destitution. The household economy is based upon the principle of division of labour, the work being assigned to different persons according to their strength and capacity. It reduces common expenditure and increases possible savings, which provides funds for agricultural improvements. It economises the cost of cultivation and increases profit. With income per head so low as it is in India as well as in this taluka, joint family is almost a necessity, if there is to be any accumulation of capital for investment in agriculture. To the extent that the progress of agriculture depends upon capital accumulation, the joint family is favourable to progress.

RELIGION AND ITS INFLUENCE

The taluka peasant is religiously minded. He is mostly a Hindu. His religion begins with the Vedas and ends in embracing something from all religions, which is praiseworthy. Since the advent of Muslim and British rule, the taluka had a few persons converted into other faiths. The Muhammedans were high class Hindus and the Christians were the Dheds. We give below the population of the taluka according to religion of the year 1931.

No.	Religion	Population	Percentage to the total Population
1	Hindus	98,657	81
2	Untouchables	7,168	6
3	Jains	1,457	1
Grand Total of Hindus		1,07,282	88
	Muhammadens	9,369	8
	Christians	4,729	4
	Others	12	—
GRAND TOTAL		1,21,392	100

Thus 88 per cent. of the population in the taluka are Hindus and 12 per cent. are non-Hindus. From a broad point of view, the converted Hindus retain the same traditions, conventions and beliefs of Hinduism which their Hindu fore-fathers observed. Therefore it is sufficient to discuss the effect of religion on the economics of agriculture from Hindu point of view.

Much is said against the religious tendencies of the peasants in India. "It is quite permissible to maintain that the deep lying religious sentiments which causes the vast majority of Indians to regard their lives relatively unimportant in the great fabric of the past and the future, embodies something far nobler and more enduring than the materials and highly individualised ideas of the western world. But from the point of view of economic development of the country such an outlook is far more of hindrance than of help".¹ Our observation in the taluka points out that agricultural progress is hindered not because the peasant considered his life unimportant but because of his ignorance and beliefs in gross superstitions in the name of religion which often involve him in indebtedness.² The spirit of religion ought to be preserved, as a truly religious mind helps

¹ "Moral and Material Progress of India" 1923-24, page 195.

² Vide 'Religious indebtedness' Ch. 8, "Indebtedness".

rather than hinders the journey of life even from a material point of view. Economic advancement is not an end in itself. Our spiritual advancement must keep pace with our physical accomplishments. As Mr. Carver observes, patient spirit of toil, sturdy self-reliance, stern and unrelenting sense of duty, forethought which sacrifices present enjoyment to future profit, the spirit of mutual helpfulness, willingness to trust to its own care in preparing the soil rather than to the blessing of the priest upon the fields, love for the soil, for growing crops and for the domestic animals are the outcome of religious life and are essential to any effective rural work". These things have to be developed on the soil, to be bred into the bone and fibre of the people, and they are the first requisites for good farming. After them comes the scientific knowledge. One nation can easily borrow farm machinery and modern methods of agriculture, but it cannot borrow moral qualities which will enable it to profit by them.¹ What is needed in the taluka as probably elsewhere in India, is the spread of general education and enlightenment which will in time relieve religion of its growth of superstitions, so that its true ideals of service may stand out clearly and influence our lives, present and future.

One of the good aspects of religious life, as observed in the villages of the taluka, is that it brought the rural communities for choral singing on every full moon day or religious holiday. This promotes a sense of brotherhood and solidarity among the people and provides them the noblest form of social amusement. Even the observance of religious holidays like Divali, Balev, Gokul Ashtami, Holi, etc., creates opportunities for co-operation, produces a sense of solidarity. Unfortunately, these festive occasions and the habit of singing together are fast disappearing.

We think that in the larger interest of the village life these functions should be revived. For, "absence of any common enthusiasm means a disunited, egoistic, disintegrating social life compared with which even war, horrible as it is, may be the lesser evils if it results in uniting people".²

¹ Principles of Rural Economics, by T. N. Carver, page 351-352.

² Principles of Rural Economics, by T. N. Carver, page 357.

CHAPTER III

PROBLEMS OF SOCIAL LIFE IN THE VILLAGE

SECTION B.

SANITATION

EXISTING STATE OF SANITATION

Modern notions of sanitation are unknown to the people of the taluka. The villages where these people live are built upon a section of village land. The houses stand in rows facing each other with the narrow lanes in between. The houses generally are two-storeyed, built of mud and bricks and roofed with Indian tiles. They are not properly ventilated; there are few windows, sometimes none and the rooms specially in the interior where women folk sleep or work are dark and unventilated. Moreover, the houses are too close to one another and the lanes too narrow to allow free passages of pure air. Besides most of the houses have in front the cattle sheds and part of the sewage goes into the lanes. The natural result is a considerable amount of overcrowding within a limited area, as men and cattle reside together, in very close proximity. The village people being conservative do not like to go out of their settlements, though the increase of population year after year increases congestion. The taluka has a fair warm climate but people do not utilise the gifts of nature to the full extent. We must not of course, ignore their point of view. They find safety for their cattle and property and for their women folk within the limited area of the settlement, and they value this security the more, as they have to be away in the fields for long hours at times. Their anxiety is not without foundation. Between 1921 and 1924 there were frequent attacks by Babar Deva on the life and property of villagers. So long as such experiences are not things of remote past, people will naturally be afraid of settling outside their settlement. But with the growth of numbers in the villages, the problems of sanitation are becoming very serious. Most people in the villages go out

for calls of nature in neighbouring village fields, while some suitable corners and unoccupied places are sought by children. This practice was not fatal to the health of the people so long as numbers in villages were smaller. But now the removal of night soils and sewage has become absolutely essential. In monsoon it mixes with the water and is in part absorbed by the land. Also, it flows on the roads and the open lands and thus spreads germs of diseases all over the village. In summer and winter too, the filth mixes with the dust of the soil and is blown all over the place. Again, as there is no drainage, the dirty water in the house is collected into pits dug near the houses. These pits become the breeding ground of mosquitoes and of the germs of other diseases. Sometimes the water from the pits flows into the roads.

Mr. F. L. Brayne gives a graphic and interesting description of Indian Village Sanitation in his book, "The Remaking of Village India". He states, "A stranger was once invited to visit a village in Gurgaon District (the Punjab). He looked sad on his return, and on being questioned, he said, 'the first thing that struck me on approaching the village was an overpowering stink. Then, from the objects on the ground I thought I had strayed into a latrine, but I was assured I was on the main village road. We pressed on past these obstacles; a breeze was blowing, and my eyes, nose, and mouth were assailed with bits of flying rubbish and filth and poisonous dust. I found heaps of foul rubbish everywhere, that had obviously never been properly cleaned up since the village was founded. The roads were littered with filth too. Finally the dear children came into view and I was shocked at their filthy and unhealthy condition. At least, one in four had permanently damaged eyes and most of them looked as if their parents did not know what water was or what washing meant. Eyes, score, nose running'. Mr. Brayne again humorously states, "When you lose your way in Gurgaon District, you find your way by nose. The greater the stink, the nearer the village. The rubbish are lying in heaps all round and inside the village, dries up and is blown over the village by the wind and is stirred up by the feet of the men and cattle. It falls into your food and

drink and your children are daily poisoned by the filth of your village. Besides this, it breeds innumerable flies which sit first on the filth and then on your food, your dishes and on your children's eyes and mouths. And remember that the flies do not wash their feet or take off their shoes when they visit you. Can you imagine any quicker way securing permanent ill-health and bad eyes and an early grave for yourself and for your family?"¹ This picture is equally true of Borsad villages.

WATER SUPPLY FOR DRINKING

The village has facilities for the supply of good water for drinking. The people are careful in choosing sites for their wells. But, they overlook simple principles of sanitation. Dirt, sewage and refuse are allowed to collect round about the wells. Sometimes, the village wells are surrounded by manure pits and it is very likely that the dirty water of the village which is not drained away, but sinks into sub-soil, might be reaching the well water.

SPREAD OF DISEASES

The combined effect of all this is that the taluka is visited by plague almost every summer and there are occasional outbreaks of Cholera epidemics. These are preventable calamities which our people seem almost to invite into their houses by their ignorance and carelessness. On occasions the Government and the Congress have attempted to clean up the villages and set before the inhabitants better standards of public and domestic sanitation.² But unless continuous campaign in favour of good living is carried out, people tend to relapse into their usual insanitary ways and habits.

¹ The Remaking of Village India, by F. L. Brayne, pages 13 and 43.

² During the Cholera epidemic of 1935, the Congress volunteers cleansed about 25,000 houses with a population of 75,000 or about two thirds of the total population of the taluka. They did wonderful work at the risk of their lives in cleansing each and every house of the age old filth and rats which spread the germs of Cholera. Congress Bulletin, Borsad. No. 32, dated 6-5-35.

SUGGESTIONS

We should suggest in the first place that the people of the taluka should be taught the elementary principles of sanitation and hygiene. The work of education in sanitary matters should begin in schools, and should be continued through social organisations, so that it can reach the adult population. The school teachers might be required to go through a short period course of training in the elements of public health. Secondly wherever the village is at all of a decent size, there should be some corporate organisations for the cleansing of streets and removal of night sewage; and people should be advised to construct proper latrines. In the third place, pure water supply must be ensured to the members of all castes and communities in the village. This is a work which requires the co-operation of the villagers and also of the sanitary authorities. At present, during summer at least, the same wells are used for drawing water for drinking and for other purposes. The only way by which pure drinking water can be had would be to absolutely separate wells for this purpose only. Construction of tube wells also is suggested in the streets wherever possible. Fourthly, villagers should have free advice regarding the planning and construction of their houses. This may be made available through P. W. D. or revenue officers. The Government might construct one or more model houses in the more important of the taluka villages or at least in the taluka town. Needless to say, that such model houses should take into account the requirements of the average cultivating farmer as well as his financial resources. In a sense, the task of re-building villages is not very difficult because most of the village houses require large repairs frequently and can be easily re-erected. Moreover we have seen that villagers, when they build new houses, generally imitate some new building which attracts their attention. The main difficulty however is of funds. We should suggest that long term loans should be made available to the villagers from Land Mortgage Banks, at cheap rates and repayable in easy instalments.

CHAPTER III
PROBLEMS OF SOCIAL LIFE IN THE VILLAGE
SECTION C.
EDUCATION

INTRODUCTION

No rural inquiry is complete unless the educational condition of the people is studied. It is education which forms the basis of social and economic progress. Its influence in enlarging the cultivator's mental horizon and in increasing the willingness to adopt agricultural improvements and his capacity to watch his own interests in buying and selling his products is immense. Again, it has a civilising effect in bringing men in more contact with, and thus developing a closer sense of unity. "The school, likewise, in addition to its purely educational functions, renders a service by the mere fact that it brings the juvenile population together day after day".¹

A BRIEF HISTORY OF EDUCATION IN THE TALUKA

The people received instruction from the village Brahmins, known as *Pandyas*, prior to the British rule. Soon after the Presidency came under British rule, Lord Hastings started a Native Education Society in Bombay, in 1820, for the spread of education. By the end of 1826, it had 10 free primary schools in Gujarat, two of which were in the district of Kaira. The district Collector supervised the schools. In 1855, a department of public instruction was started to look after the spread of education in the Presidency. The first Inspector of education in Gujarat was Rev. Hope who organised the department on sound basis. By this time two training schools for teachers were started at Ahmedabad and Rajkot. During 1865, the district of Kaira had 93 schools of which 12 were in this taluka.

LOCAL CESS

As the expenses on education began to increase, the Government imposed a local cess of one anna on every rupee

¹ Principles of Rural Economics, by T. N. Carver, page 362.

of land revenue in 1860 and decided to devote its proceeds to local objects such as minor public works in villages and education. In the beginning, one third of this income was devoted to Primary Education, but this proportion was made one half in 1903.

THE PRIMARY EDUCATION ACT OF 1923

The department of education was transferred to a Minister of Education in the Government of Bombay by the Montford Reforms of 1919. Since then, the people have begun to take direct interest in the spread of education. The Primary Education Act of 1923, was more or less a result of the popular demand to lessen the interference of the Government in education and to transfer it to the people. The Act empowered the District Local Boards to form School Committees to supervise the Primary Schools in the District. It was also allowed to levy additional tax on the people for the purpose of education. The Government does not now interfere with the District Boards in the matter of education, unless the latter infringe some provision of the Education Act.

CLASSIFICATION OF EXISTING EDUCATIONAL INSTITUTIONS

The taluka of Borsad has at present 145 educational institutions of different grades distributed as follows.¹

No.	Kind of schools	Total number of schools
1	Ist grade Primary schools	33
2	2nd grade Primary schools	52
3	Vernacular schools for girls	21
4	Elementary English Schools	36
5	Middle schools	2
6	High school	1
Total number of schools		145

¹ These figures have been received from the Taluka Local Board, Borsad, and represent the year 1934-5.

Of the total 145 schools 98 are conducted by the Taluka Local Board, Borsad, under the direct control of the District Local Board at Nadiad. The remaining 47 are private institutions. Out of 145 schools, 33 are first grade Primary Schools which send students for the Vernacular Final Examination at Nadiad. 52 institutions are known as second grade Primary Schools and teach the three R's. There are only 21 girls' schools in the bigger villages of the taluka where girls of advanced classes receive instruction. There are 38 Elementary English Schools of which 26 are maintained by Christian Missions and the rest by local persons in the villages. The taluka maintains only one High School at Boisad. It was started in 1913. Its building was erected at a cost of Rs. 40,000/- contributed by people of the taluka and is unusually attractive compared with the buildings of other schools in the taluka. The yearly cost of maintaining the institution is about Rs. 10,000/- of which Rs. 1,000/- is contributed by the Government as a grant and the rest is recovered from the fees and public donations. There are about 350 students in the High School, some of whom come from neighbouring villages. It has a boarding accommodation for 50 boys.

LITERACY IN THE TALUKA

The following table indicates the progress of literacy in the taluka between 1901 and 1931.¹

Year	Percentage of literates to the total population in the taluka		
	Males	Females	Total
1901	17	0·9	9
1911	14	1·5	8
1921	19	3·0	12
1931	24	2·6	11

It will be observed from the above table that literacy in general has increased only by 2 per cent. during the last

¹ The above figures have been taken from the Census Reports of the Bombay Presidency.

30 years. Secondly, spread of education is more among the males than among the females. Female education seems to have been very much neglected by the people.

CAUSES OF SLOW PROGRESS OF EDUCATION

Firstly, illiteracy is largely confined among peasants who do not set a high value on literary education as an equipment for agricultural occupation. This notion has been strengthened by glaring instances of unemployment among the highly educated sons of other communities in the country. Secondly, female education is totally neglected by the people who generally believe that no material gain would be derived by educating their women. Thirdly, Harijans or untouchables who form about 15 per cent. of the total population are debarred from entering the precincts of the village school because of social custom, and they are too poor to afford separate schools for them. Fourthly, the peasant in the taluka is unable even to meet the usual expenses of schools. Anklav, a village surrounded by many smaller villages within a radius of not more than 2 miles, owns a school building erected at a cost of Rs. 20,000/- but the school has only 70 boys on its roll, who receive English education up to third standard and about 300 boys in the Vernacular 1st grade school. On inquiring from the local school committee, we found that the majority of the people can ill-afford to pay the fees and school expenses of their children. Fifthly, children of school going age are often needed by their parents at home or in their fields. They are therefore, compelled to leave school early, in order to help their parents. This fact was borne out by our inquiry into the school register which showed that pupils frequently remained absent during working days when their parents badly required them on account of seasonal scarcity of labour. We give below, a table showing average daily attendance and absence of the pupils in each month of the year 1933-34, in the First Grade Vernacular School at Anklav.¹

¹ Figures are supplied to us by the Headmaster of the school 1934.

No.	Month	Students on roll	Average daily Attendance	Average daily absence	Percentage of absentees to the total on the roll
1	March	288	210	78	27
2	April	273	220	51	19
3	May	273	210	63	23
4	June	272	219	51	19
5	July	299	241	58	19
6	August	314	268	46	14
7	Sept.	316	256	60	19
8	Oct.	319	241	78	24
9	Nov.	322	250	72	22
10	Dec.	318	270	48	15
11	Jan.	325	279	46	14
12	Feb.	332	283	49	14

It will be observed from the above figures that the percentage of absentees increases in March, May, October and November which are the busiest months for a cultivator. March is the harvesting month for later Rabi crops like Tuer and Cotton and sometimes also tobacco while October and November are harvesting months for Kharif crops. May is a month both for celebrations of social functions like the marriage etc., and also for manuring the fields. Sixthly, as the Royal Commission on Agriculture in India, 1927, observes, "the village school master is also inefficient".¹ He has failed to spread in the village a desire for education and to surmount the obstacle arising from the apathy and indifference of the people. His pay and prospects have never been such as to encourage good work. So he has not been able to attract the students from the village in his school.

EFFECTS OF ILLITERACY IN THE TALUKA

In spite of the poet, ignorance really cannot be a bliss to anybody. An illiterate farmer falls an easy prey to the wiles of the village Bania. He is not able to dispose off his goods

at maximum profit. He does not know how to keep proper accounts and is not able to adjust his receipts and disbursements properly. He hardly thinks of the future unforeseen calamities. He is conservative and takes little interest in the events of the outside world, such as might possibly help him to improve his agriculture. He is socially backward and cannot keep pace with the movements of the times and will oppose any innovation which strikes at his orthodoxy. However rich he is, he maintains a very low standard of life which often results in malnutrition and inefficiency. His wants are few, his residence is insanitary and his life is short.

SUGGESTIONS TO SPREAD LITERACY

A little spread of education would go a great way towards bringing about better living and better farming. "Until literacy permeates the villages, the real desire for self-improvement cannot be born, so all efforts must be more or less up-hill work. Not only will the elementary literacy be the first step towards freeing the villager from many of his present burdens, it will implant in him the self-respect and the ambition which will make him desire a model village of his own accord".¹ The spread of literacy is one of the potent factors in creating that interest which agriculture as the main industry of the country both merits and demands.

(1) *General Suggestions* :—We suggest, firstly Primary Education should be made compulsory. Its introduction in the adjoining villages of the Baroda State, has disseminated literacy to a great extent among all classes including the poor Dharalas and Dheds. If it is free it is likely to reach even the hovels of the poorest. Royal Commission on Agriculture was convinced that the progressive adoption of the compulsory education was the only means by which literacy might be spread in the villages. Thirdly, "untouchables" should be allowed in the public schools of the villages, and there should be no bar or distinction against them. Fourthly, long vacations in the schools should be adjusted to the harvesting months as is being done at present in Holland,

¹ Manual of Village Improvement, 1933, by F. Sykes, Ex-Governor of Bombay, page 21.

and Denmark. In Denmark "no pupils are received from August to November, i.e. during harvest months, as most of the young people are farmers' sons and daughters who must be at home at the time".¹ Fifthly, the teacher must be efficient and the school building must be suitably equipped with all facilities for teaching. Sixthly, the authority concerned with immediate control of Primary Education, i.e. the District Local Board, should try in all possible ways to make known to the people the evils of illiteracy. It should also see that expenditure on Primary Education is not wasted and that boys should remain at school, at least for four years, so that lasting literacy may be achieved.

(2) *Agricultural Education* :—The present system of education has been much criticised all over the country. It prepares students only for service and makes them averse to rural life. It distinctly separates the educated class from the masses. The educated persons have forsaken the villages, and the rural areas are now without local leaders who could guide them in their social and economic movements. The failure of the co-operative movement in the taluka is mainly due to the absence of capable leaders in the managing Committees of the societies. The people in the villages are now divided on party lines and are envious and zealous of each other. The worst thing is that they are too narrow minded to tolerate even the progress of their neighbours. They are more litigious and improvements in agriculture are at a standstill. Their social and religious life is uninteresting.

It is essential, therefore, that education should be more related to the wants of rural life. It must create interest among youths for agriculture. The text books must be rural in tone, and the education to be conducted in such a way that pupils would feel that their lives are closely connected with the prosperity of agriculture. "If at the end of his Primary course, a boy can read and write with facility and intelligence and can do simple calculations in terms of the marketing of his father's produce; if he knows the simple rules of health, has been taught the use of his hands and has been imbued

¹ Rural Denmark and Its Lessons, page 19.

with a love for the countryside and a sense of fair play to his neighbours and to dumb animal, then there will be firmly established both the desire and the power to make the village a better place to live in, and both the teacher and the system may be held to have abundantly succeeded".¹ Unfortunately, the *Loni* Schools or Vernacular Agricultural Schools which were started at some places did not succeed in attracting students and proved too expensive for the Government of Bombay. The Royal Commission on Agriculture also recommended that they should be closed. No such school however, was established in Kaira District. There is one College at Poona for higher agricultural studies. But, efforts made to spread agricultural education on the lines desired by the people are very few. If the rural areas are to prosper the Government cannot neglect this aspect of rural welfare.

(3) *Technical Education* :—The Primary Education in the village schools should also be supplemented by simple courses of technical training which may help an agriculturist in mending his implements and in carrying his subsidiary occupations. A little knowledge of carpentry, smithy, hand spinning and weaving, preparations of indigenous simple medicines and other such lucrative business would certainly add a handsome amount to the small income of the cultivators.

CHAPTER IV
ECONOMICS OF CULTIVATION
SECTION A.
LIVESTOCK

NUMBER OF CATTLE IN THE TALUKA

The number of cattle in the taluka were as follows in 1920 and 1934.¹

No.	Animal	1920	1934	Percentage to the total in 1934	Increase (+) or decrease (-) in 1934 as percentage to 1924
1.	Oxen	14,576	14,842	18	+2
2.	Bulls	18	21	—	+16
3.	He buffaloes	107	219	—	+104
4.	She buffaloes	23,105	27,162	33	+17
5.	Buffaloe calves	19,237	25,499	31	+32
6.	Cows	1,619	1,012	1	-38
7.	Cow calves	5,656	4,516	6	-20
8.	Horses and Ponies	279	1,235	1	+340
9.	Goats	5,987	7,997	10	+33
	Total	70,584	82,503	100	+16

The following table gives the number of cattle per unit of cultivated land in the taluka and compares the figures with those in other provinces of India.

¹ Figures for 1920 are taken from the "Statistical Atlas of the Bombay Presidency, and those for 1934 are received from the T. D. A. A., Borsad.

COMPARATIVE TABLE OF CATTLE IN RELATION WITH LAND¹

No. Province	Cattle per net cultivated Area	Per 100 cultivated area			Area cultivated per yoke. Acres.
		Grazing Land Acres (1)	Buffaloes (2)	Bullocks (3)	
1 Bengal	1.3	33	4	36	5.6
2 Bihar and Orissa	0.6	56	13	27	—
3 The Punjab	0.5	62	19	16	12.9
4 U. P.	0.8	52	24	24	6.9
5 Madras	0.6	79	17	—	13.0
6 Bombay	0.3	33	7	10	20.0
BORSAD	0.7	8	22	12	16.0

PROBLEM OF PASTURE LAND

According to the figures of 1932-33, the grazing ground area in the taluka was as under :—

Grass Land	...	Acres	8,949
Cultivable waste land	,		122
Total	...		9,071

The total pasture land forms 8 per cent. of the total cultivated area as may be observed from the previous table. This figure is markedly very low compared with the other provinces of India. It is a fact that the greater the grazing land, the greater the number of cattle in an area, if other factors are equal. In this taluka, however, despite the small extent of pasture land, peasants have been able to maintain a good number of cattle and the largest number of buffaloes (except U. P.) per 100 acres of cultivated land. This is because, the peasant procures enough fodder from other

¹ These figures (except of Borsad) are taken from the Report of the Royal Commission on Agri. in India, 1927, page 182-84.

* The figures are received from the T. D. A. A., Borsad.

sources. A system peculiar to *Charotar* within which this taluka lies and scarcely found in other parts of the country, is that of setting apart a small portion of land on the boundaries of fields for growing grass. The system evoked the admiration of Dr. Voelkar. "In some parts of the country, the people themselves are aware of the advantage of growing grass along the edges of water channels and the borders of the fields. But the instance of greatest care in this respect that came under my notice was at Nadiad (*Charotar*) in Gujarat, where the cultivators do not use the village common land for their cattle. But every one of their fields is enclosed with a hedge and then comes a headland of grass 15 to 20 feet wide all round the field, and producing capital grass. There is a double object in this practice, for, as the fields are hedged and have trees round them for supplying firewood and wood for implements, the people know quite well that crops will not grow when thus shaded, but that grass will. They obtain four or five cuttings of grass in the year as food for their cattle, and when the fields are empty, the cattle are let in to graze on them".¹ The grassy lands are not included in the figures of pasture land given above. If a minimum quantity of only one Guntha ($1/40$ th acre) per acre of cultivated land is set apart for growing grass, we shall have about 3000 more acres of best land available for the maintenance of cattle. Again, the cultivators devote nearly two-thirds of their lands to such crops as Kodra, Rice, Juwar, Bajari, Math etc., from which fodder in one or other form is available in plenty. Generally the cattle are fed for about eight months on such green fodder and weeds available from their fields and maintained on dry hay for the rest of the year. Every cultivator is careful enough to make provision for fodder for his cattle and therefore, he sets about 20 to 30 per cent of his total cultivated land for growing Juwar, the best fodder known to him. Besides, there are about 56,000 trees or about 2 trees per every acre in the taluka.² In summer when the shortage of hay is felt, many poor cultivators are seen feeding their

¹ Report on the Improvement of Indian Agriculture. By Dr. J. A. Voelkar, page 175.

² Figures received from the T. D. A. A., Borsad.

cattle with the leaves and fruits of trees like Rayen, Mahura, Ambli, etc. The taluka abounded with a great number of trees before the notorious famine of 1900. And during the famine which was caused by a complete failure of rain,¹ it were these trees that sustained the lives of hundreds and thousands of cattle for the whole year. As the people observe, the ratio of mortality among the cattle was less than among men, and this may be attributed to the abundance of trees. A great many trees being made leafless, dried up gradually, and since then, their number has greatly diminished. It will not be out of place to suggest that the Government should encourage the planting of trees by cultivators. The provision in the Land Revenue Code, that income from trees shall not be taken into consideration in the assessment of a field is really a commendable one. But one should not forget the attempt to impose tax on Mahura trees, and this attempt and similar attempts caused many a peasant to cut down his trees.

Again, the hedges of fields are always green and the shrubs and bushes supply good fodder for the cattle. Under such circumstances, though the reserved grazing area is very small, the cattle of the taluka do not suffer from want of fodder during normal years, and are well fed and reared.

SHEEP AND GOATS

Sheep and goats form only 10 per cent. of the total live-stock in the taluka. The Vagharris, the Rabaris and the Shepherds keep sheep and goats only, in villages near which large tracts of pasture land are freely available. Generally they are in and near the villages on the river Mahi, in whose valleys large tracts of pasture land are found. The number of sheep and goats kept by individual shepherds varies greatly. They take out their flocks for grazing at dawn and return before dusk. During its march the flock feeds on the hedges on the road side and weeds and grass that grow on the roads and pasture lands and banks of the tanks, ponds and the river. They prefer small leaves and pods of the Babul

¹ The rainfall in 1899-1900 was only 6.14 inches (Kaira Gazetteer, 1904).

trees or Samari trees to anything else. During April and May, they live upon the dry leaves of the trees and scattered weeds of the fields.

Generally the milk of the sheep and goats is consumed locally and is not exported. Similarly, their hides and skins are also used by local shoe-makers. The wool produced from them is of an inferior quality and is spun and woven into rough *Dhabaras* or blankets which are used by the owners themselves, and seldom sold to local markets. The hair taken off the body of goats is generally used for making strings for cots. Their excreta are considered precious manure for some crops like tobacco, and those cultivators who can afford it, secure them by allowing the flock to rest for a night or two on their fields.

The shepherd is often the honest fellow in the taluka. If proper care of sheep is taken and special breeds supplied, the quality of flock may be improved greatly to the benefit of poor families who now pass a miserable life. The remarks of the Royal Commission on Agriculture in India, 1927, in this connection applies to the conditions in this taluka. "It (sheep) is the poor man's cow and its milk can be raised with little difficulty by selection".¹ Its milk is very good, especially for children, and its wide use may contribute much to the health of the people. However, as cultivators are accustomed to use buffalo milk, it seems that they would not take to goat's milk. But improvement in this direction would greatly improve the economic condition of the shepherds.

THE COW

Cows including calves form only 7 per cent. of the total cattle in the taluka. The people are not interested in rearing cows. Their number has decreased by 20 per cent. in the last 15 years. Though the cow gives a sweet and digestible milk and useful progeny of bullocks which are at present imported from outside, cultivators in the taluka neglect it and rear buffalo instead. To some extent the cultivator's choice is justified. The cow likes to wander free on

¹ Page 180.

open meadows, but the taluka has very few such open spaces. Moreover, its milk is not as rich in fat and ghee as that of a buffalo. On the other hand the male progeny of the buffalo is not useful at all to the farmer, and it is doubtful if the buffalo is a better investment in the long run. In this connection the following passage is interesting.

"The buffalo is known unlike the cow, for its ability to thrive on fodder. She requires and consumes a good deal of fodder and can utilise it for purposes of producing milk and fat. The cow is unable to do so. When the prices of fodder are dear, any breed can beat the buffalo in producing cheap fat. When prices are moderate, only the specially bred Indian cow beat her. When prices are low, the buffalo can compete with any breed in butter production and beat the ordinary Indian cow in the production of both milk and butter. This is the main reason why the villager prefers the buffalo to the cow notwithstanding the fact that he has to pay a higher price for the buffalo."¹

THE BUFFALO

Buffaloes and their calves form 67 per cent., the highest percentage of the cattle strength in the taluka. Next to agriculture, buffalo breeding is the chief source of income to the cultivator. Income from a buffalo varies according to its breed; the better it is the greater the income. We give below the income from and expenditure on buffalo of average quality in a year. Such a buffalo costs Rs. 100/- and gives milk for 9 months.²

¹ Vide Chapter 6 "Rural Industries."

² These figures were supplied to us by Mr. S. D. Patel, Anklav, a villager experienced in the art of cattle breeding. He keeps two buffaloes and two bullocks and cultivates more than 20 Bighas of land. Before he supplied the figures to me, he got them tested by the opinions of other experienced persons. He informed us that best breeds gave more than 20 lbs. a day. But such cases were rare. While the buffalo selected for our study was found in large numbers in all the villages of the taluka.

Month (1)	Milk per day lbs. (2)	Daily gross income (3)	Daily con- sumption of grass (4)	Cost of corn cotton seeds etc., consumed (5)	Net profit or loss per month (6)
		Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.
1	12	0 9 0	0 3 0	0 6 0	0 0 0
2	16	0 12 0	0 3 0	0 6 0	5 10 0
3	20	0 15 0	0 3 0	0 6 0	11 4 0
4	16	0 12 0	0 3 0	0 6 0	5 10 0
5	16	0 12 0	0 3 0	0 6 0	5 10 0
6	14	0 10 6	0 3 0	0 4 0	6 9 0
7	12	0 9 0	0 3 0	0 4 0	8 12 0
8	12	0 9 0	0 3 0	0 4 0	8 12 0
9	8	0 6 0	0 2 6	0 2 0	2 18 0
10	—	—	0 2 6	—	—
11	—	—	0 2 6	—	—
12	—	—	0 2 6	—	—
Total per year	3,780	117 3 0	63 12 0	82 8 0	30 15 0

BUFFALO BREEDING

The income from buffalo is earned by the hard labour of the cultivator. An industrious farmer would go early morning in search of green weeds, shrubs and creepers available in his fields and hedges. The land of the taluka is rich and retentive of moisture and preserves green patches of shrubs for about 10 months a year. The hard working cultivator always economises his expenses of maintaining his cattle by labouring hard in collecting weeds instead of buying dear hay. A peasant attends to his buffalo in many ways. He boils the fodder, the cotton seeds and takes it to the pond for the cattle to drink at regular intervals. The house wife also is busy; she cleanses the cow-shed and collects the excreta of cattle in the manure pit. This provides valuable manure to the cultivator at the end of a year, worth on an average Rs. 10/- per buffalo and Rs. 5/- per bullock. The house-wife cleanses the shed, milks the buffalo and churns the curd into ghee. Children help the parents wherever they can, and learn the rudiments of cattle breeding in course of time. Cattle

breeding needs perseverance and an idle peasant would make a bad job of it. An average cultivator keeps more than one buffalo and earns on an average Rs. 40/- if he is a Patidar and Rs. 33/- if he is a Dharala.

A buffalo gives milk for 10 years. During this period it gives birth to about three or four female calves, the total value of which compensates the farmer for the loss and decadence of the old buffalo. So an industrious cultivator is hardly a loser in the end.

THE BULLOCK

Bullocks form 18 per cent. of the total cattle in the taluka. They are used for ploughing, harrowing and sowing the land, in drawing water from the well and carrying goods from place to place. Unfortunately, they are not bred in the taluka and are imported in large numbers from Scind, Kathiawar and Ahmedabad. The total value of bullocks imported into the taluka exceeds Rs. 1,00,000.¹ These important bullocks are generally known as *Kankret* bullocks and are marked by their general excellence in all respects. They are singularly hardy and strong. They are big in size and attractive in appearance. No one can fail to be impressed by their curved symmetrical horns, the broad and shining temples and the long and slanting necks. Their massive body and attractive haunch really increases their value. The bullock is the most valuable asset of the agriculturist. As the people say, the cultivator pays greater attention to the selection of his bullock than to that of the bride for his son. He keeps and feeds it as if it were a member of his family and he pampers it in every way when it is tired.

¹ The total No. of Bullocks in the taluka was 14,576 in 1920 and 14,842 in 1934-35. The number has remained more or less constant for the last 15 years. An average bullock costs Rs. 75 and gives service for 10 years. Hence if 10% of the bullocks are imported every year, the taluka has to pay more than Rs. 1,00,000 a year.

NUMBER OF WORKING DAYS IN A YEAR PER PAIR
OF BULLOCKS

The following table gives the number of days and hours of work during which a pair of bullocks is employed on a plot of 20 Bighas of land.¹

No.	Month	No. of days of employ- ment	No. of hours of employment	Work done during the period
1	Vaishakh	15	160	Carrying passengers for marriage ceremony, carrying manure from manure-pits to fields, and harrowing.
2	Jeth	22	116	Ploughing, harrowing and sowing seeds.
3	Ashad	19	148	Ploughing & harrowing.
4	Shravan	23	184	Ploughing & harrowing.
5	Bhadarvo	10	59	Ploughing & harrowing.
6	Aso	13	88	Harrowing, trampling hay for separating corn and carrying goods.
			755	
7	Kartak	9	36	Harrowing, trampling hay & carrying goods.
8	Magshar	10	50	Carrying goods.
9	Posh	6	30	Carrying goods & pas- sengers
10	Maha	6	30	Carrying goods & pas- sengers
11	Fagan	7	35	Carrying goods & pas- sengers
12	Chaitra	10	60	Carrying goods & pas- sengers
			241	
Total		150	996	

¹ The figures were supplied to us by Mr. S. D. Patel of Ankav. Mr. Patel is an intelligent and efficient cultivator. Owns and cultivates 20 Bighas of land. He is well acquainted with the Problems of Rural Economy in the taluka. His figures are fairly trustworthy.

It will be observed from the above table that a pair of bullocks engaged in tilling 20 Bighas of land worked for 996 hours in 150 days. If the bullocks worked 8 hours a day, they would be employed only for 125 full days and would remain idle for about 8 months in the year. Secondly, the pair seems to be underemployed even during the busy months. Thirdly, the pair worked for more hours per day during the monsoon than in winter and summer.

The problem then is how much work a pair of bullocks in the taluka should do? The underemployment of bullocks is in part seasonal and in part permanent. The amount of work done by them varies from season to season and is determined by the nature of the agricultural operations suited to particular seasons. Hence part of this seasonal underemployment cannot be avoided unless agriculture itself is re-organised so that the total work is more evenly spread over the whole year. We have elsewhere suggested how this should be done, but naturally there are narrow limits to such re-organisation. The distinction between busy and slack seasons will still remain and the number of bullocks should be adjusted to the amount of work to be done in the busy season. The six months from Vaishakh to Aso are the busy season in our taluka, and during these months the total amount of work done by a pair of bullocks was 775 hours i.e. about 4 hours per day. It is not possible to determine how much work a pair of bullocks can do without injury to their health and efficiency. But certainly the present amount of work done by them even in the busy season is much less than this. This suggests that in our taluka the number of bullocks is more than is required to carry on agricultural operations on the present scale.

Our opinion is that a pair of bullocks can work for 8 hours per day during the busy season without loss of energy or efficiency. On this assumption a pair of bullocks can plough 25 acres of land in the taluka. As the cultivated land in the taluka is 1,20,000 acres we require on the above calculation, 4,800 pairs of bullocks. But we have 7,421 pairs of bullocks and the surplus number should be reduced. The Royal Commission on Agriculture in India, 1927, recom-

mended that all steps tending to the reduction of the number of bullocks should be immediately taken.¹ Here however, Mr. Kumarappa differs. His argument runs thus. "One would be inclined to think that this unemployment of bullocks may be caused by an over supply. This is not so. Without bullocks, a farmer would not be able to carry out the required processes in preparing the land for cultivation in proper time. In agriculture, time is of the first importance and if the operations are not performed at the opportune moment the yield will be effected. Besides, it is not possible to hire bullocks just at that time, as all agriculturists would be requiring their bullocks badly at one and the same time".² The argument is worth considering. It holds place where the amount of land cultivated by each family is more than the capacity of bullocks. But in a taluka where the average amount of land cultivated by a family is not more than nine acres and where a pair of bullocks can plough 25 acres of land in a year, it is surprising why the number of bullocks should not be reduced. We therefore, suggest a widespread system of *Hundal* to reduce the present number of bullocks to the minimum requisite. In all the instances we came across, the *Hundal* system was found to have succeeded. Moreover we should expect improvements in agriculture that are likely to take place e.g. the consolidation of fragmented holdings, improvement of village implements, of roads, of irrigation schemes etc. And this will reduce the demand for bullocks and we shall have to face a still more serious problem.

Again, we observed in the preceding pages that bullocks have to remain underemployed during large part of winter and summer even when they are fully employed in monsoon. A part of this underemployment is not to be deplored, it enables the cattle to recoup their lost energy in the hard labour of tilling the land. But whenever possible, employment should be found for them for the rest. This can be done only by an extension of agricultural operations into what are now the off seasons. For this intensive cultivation must replace

¹ Page 192.

² A Survey of Matar Taluka, by J. C. Kumarappa, page 21.

present practices. If fodder crops are raised by irrigation during summer instead of in monsoon as to-day or if tobacco fields are irrigated by water from wells, the unemployment of bullocks would be greatly reduced. Moreover with a larger output and less uneven spread of production there would be more work to be done by bullocks in drawing water and carting produce. It has been observed that even the existing wells are not fully utilised. There is enough scope for intensive cultivation in the taluka; and in all methods of intensive cultivation, bullocks are absolutely necessary.

FODDER OF THE CATTLE

The fodder supplies to cattle materials for growth and energy. Cattle are usually fed on concentrates like food grain, cotton seeds, oil cakes etc., and on roughness like hay, green grass and Bajari and Juwar fodder. The concentrates are more nutritious than roughages. Chemically each fodder contains moisture, ether extract or fat or oil, albuminoids or proteins, carbohydrates, fibre, and ash and sand. The moisture in the fodder has no value since water is separately supplied to animals. Ether extract or fat is highly concentrated constituent for the production of energy. Proteins, build muscles and body. Carbohydrates include starches, sugar, non-nitrogenous organic acids etc., and supply heat and energy for internal and external work of body as fats and oils do, but are not so efficient as the latter. Fibre is not very substantial but does useful work in filling the stomach. It is present in large proportions in roughages. The soluble ash contains valuable mineral matter such as calcium, phosphorous, sodium, chlorine, iron, sulphur, etc. The sand has no food value and lowers the value of the food-stuffs. Besides, certain accessory food factors which accompany the fodder are:—Vitamin A indispensable for growth and health, Vitamin B whose absence causes diseases, weakness and even paralysis, Vitamin C which prevents scurvy and Vitamin D which is antirachitic and prevents rickets. Many of these Vitamins are present in green grass and fresh food. They are not quite inactive in hay. Concentrates contain good quantities of Vitamins. When mixed fodder

concentrates and roughage is given in proper portions there is no likelihood of a deficiency of Vitamins.

We give below two tables giving details of fodder supplied to bullocks and buffaloes in the taluka.

TABLE 1.

The average Patidar spends Rs. 63/- on a bullock in a year, and the average Dharala only Rs. 29/-.¹ We give below cost of different kinds of fodder supplied to bullocks both by a Patidar and a Dharala

Cost of ONE bullock only.

No.	Fodder	Quantity supplied to a bullock in a:-			
		(1) PATIDAR FAMILY		(2) DHARALA FAMILY	
		Quantity	Price	Quantity	Price
1	Juwar Hay	400 bundles	16 0 0	200 bundles	8 0 0
2	Bajari hay	400 do	8 0 0	200 do	4 0 0
3	Hay	---	6 0 0	---	9 0 0
4	Ghotu	---	3 0 0	---	3 0 0
5	Green grass	---	15 0 0	---	—
6	Guwar	5 Mds.	7 8 0	2 Maunds	3 0 0
7	Oil cakes	5 Mds.	5 0 0	1 Maund	2 0 0
8	Jaggery	1 Maund	3 0 0	—	0 0 0
Total			63 8 0		29 0 0

TABLE 2.

An average buffalo in the taluka is fed for a year on concentrates worth Rs. 82-8-0 and roughages worth Rs 63-12-0 as follows:—

No.	Fodder	Quantity	Price
			Rs. As. P.
1	Oil cakes	4 Mds	4 0 0
2	Geggary	1 ,,	3 0 0
3	Methi	4 ,,	7 0 0

Refer Chapter 4, Section E. Cost of production.

No.	Fodder	Quantity	Price		
				Rs.	As.
4	Sava	1 Md.	...	2	0
5	Cotton seeds	50 Mds.	...	62	8
6	Bajari	3 ,,	...	3	12
7	Bajari hay	600 Bundles	...	12	0
8	Kodra and Rice hay	— — —		15	0
9	Ghotu	— — —		10	0
10	Green Grass	— — —		27	0
		Total		146	4

TABLE 3.

Here is attached an analysis showing the feeding values of different fodder supplied to cattle in the taluka.¹

No.	Fodder	Moisture	Fat	Proteids	Carbo hydrate	Fibre	Ash	Total
(1)	(2)	(3) %	(4) %	(5) %	(6) %	(7) %	(8)	
1	Juwari hay	9.00	1.3	4.81	55.59	23.0	6.30	100
2	Bajari ,,	7.60	1.15	8.87	50.68	29.68	7.35	100
3	Kodra Straw	13.20	1.25	8.06	41.14	31.8	9.55	100
4	Rice ,,	2.50	1.05	2.25	40.4	35.1	18.7	100
5	Tuer Chunni	7.20	8.60	18.97	51.18	12.15	7.3	100
6	Cotton Seed	10.80	13.60	10.31	34.44	18.25	4.6	100
7	Dry Cotton balls	12.30	1.85	6.68	59.77	30.60	8.8	100
8	Oil cake Ses- sum	9.55	11.50	41.12	23.68	4.35	9.8	100
9	Guwar	10.92	3.80	32.25	43.03	7.10	3.4	100
10	Math	6.50	0.65	23.56	58.69	4.3	6.3	100

It will be observed from the above tables that the peasant in the taluka supply varieties of concentrates and roughages to his cattle. The food of an average bullock seems poor com-

¹ Note on Cattle of Bombay Presidency, No. 75 of 1915, page 38 to 45.

² Cattle feeds of Western India, No. 161 of 1930, Govt. of Bombay,
page 4.

pared with that of a buffalo. However, the fodder contains Guwar and oil cakes which largely restore its energy. The Patidar feeds his bullocks well but the Dharala cannot. The latter lives in the field for about 8 months in the year and allows his bullock to graze on the borders of the fields. He maintains him on weeds and green fodder on the hedges and also on leaves of trees, but would scarcely spend money on fodder. It seems that buffaloes are maintained very well by both the castes. Cotton seeds form the greatest proportion of fodder in the food of buffalo and has proved of immense value in increasing the quality and quantity of its milk.

CRITICISM AND SUGGESTIONS

The cattle play an important part in the economics of agriculture. The bullock is the backbone of agriculture as it is a draught animal and the buffalo is an important source of income as it is a milch cattle. It is therefore, essential that much attention should be paid to the betterment of cattle in the taluka. We think, that there is an enormous profit to be made if we set about only the business in the right way.

Firstly, people should be advised to keep cows instead of buffaloes. The buffalo cannot provide a draught animal for ploughing the land though it provides milk. But the cow can supply both, and thus it pays more in the long run. This would save about Rs. 1,00,000 a year which is spent on bullocks imported from outside. However, in an area where people are accustomed to rear buffaloes for generations together one cannot expect an early substitution of cows as milch cattle. During this transitional period, we cannot neglect the problem of buffalo. Here we suggest (secondly) that better young stock of buffaloes should be produced by supplying good male buffaloes to the cultivators in the taluka. At present there are only 219 he-buffaloes in the taluka which number is very small compared with the population of she-buffaloes which are 27,162. The situation is very deplorable, especially in this area where cultivators are believed to be skilful in the art of cattle breeding. The cultivators neglect the young male buffaloes who die in 90 cases out of 100 within the first five or six months of their birth. Those who

are fortunate to survive, are never reared at home but are sent to *Panjrapoles* which maintain such neglected cattle. The *Vaghari*s (the lowest tribe among *Kolis*) also keep such neglected male buffaloes. The cultivators take their buffaloes to them whenever they want, but as the bulls reared by *Vaghari*s are underfed, they are not able to render good service and the progeny deteriorates. "The breeding bull selected should look a strong energetic animal. Good bone, deep broad chests; strong broad backs, and fully developed bodies are all very important".¹ Its head must be prominent, eyes wide, muzzles broad and nostrils attractive. The sum total of these qualities is called *Character*. The taluka male stock is much inferior to the type described here. Its bones are thin, chest narrow, eyes deep and dim and limbs not well developed. The *Vaghari*s do not supply proper food to them partly due to poverty and partly due to their notion that they would get new ones free in case the old ones die. They keep the animal for their maintenance and not for the benefit of the cultivators. Being illiterate, they have no idea that their animals should be properly cared for in the larger interests of the village or the taluka. We suggest therefore that the whole question should be taken up by the Livestock Improvement Societies which should be found in important villages. The Government also should provide healthy bulls to each village as it has done to two or three villages of the taluka. The existing *Panjrapoles* which are maintained in the big villages of the taluka could also render great service if they are encouraged to do so by the Government. They are maintained by public charities, and instead of keeping alive merely the old and infirm and neglected cattle, they should take up task of breeding good cattle. Some ten years back, when Sir C. V. Mehta was the Minister of Agriculture, the Government wanted such institutions to co-operate with it. Unfortunately the intention of the Government did not reach a sufficient number of directors of *Panjarapoles*, and the attempt was given up.

¹ *Cattle Breeding in the Bombay Presidency*, by E. J. Bruen, No. 136 of 1927, page 14.

Thirdly, balanced ration for a bullock and a buffalo in the taluka should be determined by the experts in the matter in order to minimise the cost of maintenance and maximise the efficiency of the cattle. Though cultivators supply concentrates and roughages, it is unknown how far do they constitute a balanced diet. It is by experiments that the Control Societies in Sweden have lowered the cost of maintaining cattle and improved their quality. An experiment carried out in 1925 at Mukteswar on judicious feeding of a cow gave excellent results. The milk supplied by the cow during the first lactation was only 2,496 lbs. a year but it rose to 10,000 lbs. during the fourth lactation year. The yield of the taluka buffalo which at present is about 3,780 lbs. a year could also be similarly raised by judicious feeding. It is the experts who have to decide what this judicious feeding is. Fourthly, proper facilities should be provided to the cultivators for the treatment of diseases of their cattle. There is only one Veterinary dispensary at Borsad in the taluka. But when the animals are too sick to walk, the people have to rely on natural cure or indigenous treatment as they cannot send for the cattle doctor unless they are prepared to pay high fees. The losses sustained through such conditions are heavy and arrangements should be made by local authorities to provide a travelling Veterinary doctor in the villages. Side by side propaganda should be carried on to enlighten the cultivators on the problems of the health of their cattle. Fifthly, each village should have a Livestock Improvement Society which may guide and advice cultivators on all questions of cattle welfare. It will enable them to place their views before the Government and secure whatever assistance they need. At present the Agricultural Department of the Government has to guess what is required by the peasants and also to create the desire for improvement of cattle among them. The Society can hold cattle shows from time to time in different villages which shall enable the cultivators to appreciate the value of good cattle. In brief, the local Society can do a great deal to increase the cattle wealth of the taluka.

CHAPTER IV
ECONOMICS OF CULTIVATION
SECTION B.
IMPLEMENTS

INTRODUCTION

The agricultural implements used by the peasants of this taluka, are indigenous, simple, cheap and suitable to the Goradu soil of the taluka. They are made of local wood and iron. Hard timber is plentiful in the taluka. Babul, Rayan and Samari trees are the common sorts of durable wood which are used in making agricultural implements. Babul and Rayan are available everywhere, and whenever a peasant wants any implement made, he cuts off a suitable branch or the thick trunk of his trees and takes it to the village carpenter. If teak is required, it is purchased from the carpenter who buys it from the timber merchants of the nearer towns. These merchants import timber from outside the taluka, specially from Bulsar and Godhra. Iron ores are also imported from outside and are shaped according to requirements by the village smith. Implements are frequently repaired and sharpened by these artisans. In return for these indispensable services the peasant pays them partly in cash and partly in grain, at the harvest time. Thus no agricultural implement is imported from outside. The village peasant observes as much economy as possible in this respect. The manufacture of implements in the village itself has another advantage also. The artisan, specially the carpenter, and the smith shapes the implement according to the desire of the peasant who always insists on having his instruments shaped to suit the nature of his soil, the capacity of his bullocks and his own. Thus an implement is made light or heavy, small or big and costly or cheap according to the requirements of the peasant.

DESCRIPTION OF THE MAIN AGRICULTURAL IMPLEMENTS OF THE TALUKA

We describe below the main agricultural implements used in the taluka.

(i) PLOUGH

Plough is the indispensable implement of agriculture and is used for breaking and tilling the land. The implement is made of wood. At the bottom end, there is a piece of iron point known as *Kos* which breaks the soil. The main body of the plough is sawn out of the trunk of a Babul tree at a proper angle. It is known as *Tungu*. At the lower end of it, a strong piece of wood known as *Chavadu* is fastened. The *Chavadu* goes into the soil and tends to wear out quickly. So it is made of the strongest wood, usually Rayan. It is assisted in breaking the soil by an iron piece, called *Kos*. The handle which is termed *Hadali* is attached to the upper end of the *Tungu*. The *Tungu* is connected with *Junsara* or the bar on the yoke of the oxen, by means of a pole known as *Chhed* made of teak. A plough is thus made of three varieties of wood, Babul, Rayen and Teak each variety being used in its proper place.

The village carpenter prepares the plough in two or three days at a cost of Rs. 10/-. An ordinary plough lasts for six years and is quickly and cheaply repaired.

The plough is chiefly used in breaking and tilling the land. The taluka soil is very soft and sandy and little labour is required in breaking even the hard crust of uncultivated land. The *kos* which is generally three feet long has its sharp point one and a half inches long. It opens the crust and goes nine inches deep into the soil. Each furrow made by a new plough is eight inches in breadth and that made by an old one is six inches. The land is tilled always after it has been made wet either by rain or with well water. A paddy crop requires three ploughings, tobacco seven to eight ploughings, sugar-cane five to six ploughings and groundnuts three ploughings. A pair of bullocks can plough two Bighas of land in a day.

By ploughing, the soil is stirred and pulverised and exposed to the various forces which help in the preparation of the plant food. It increases the moisture retentive capacity of the soil, eradicates weeds and sometimes helps to control plant diseases. The Patidar seems to be much more conscious

of the advantages of ploughing his land properly than the Dharala and other agricultural castes in the taluka.

THE HARROW:

Next in importance, comes the harrow, used for light ploughing and weeding the land. It is a very simple instrument having a head piece, prongs, iron blades, the pole and the handle, made of Babul tree. The prongs are attached to the head made of hollow iron bars which support the iron blades. The handle is fixed on the top of the head piece. The head piece is connected with Junsara or the rod on the yoke of the oxen, by means of a pole, either single or bifurcated, made of teak.

It is the iron blade that works here. It varies in length generally from six to twelve inches according to the requirements. A harrow with a twelve inches long blade is known as *Karab* and costs about Rs. 5/-. It lasts for about six years. The blades are sharpened each year. A harrow with a six inch blade is known as *Karabadi* and costs Rs. 3/- and lasts for three years. A *Karab* is far heavier than *Karabadi*.

In the light soil of this taluka a harrow is more frequently used. If the land is Vasal or that in which the previous crop was Tobacco, harrowing forms a good seed bed for Kodra mixture (which includes Kodra, Paddy, Tuer, Sesame, Bavto), Juwar, Bajari and Cotton. After one or two ploughings much of the labour of ploughing is saved by the process of harrowing on soft land. It breaks to dust the clods of earth upraised by plough and levels the ground. It eradicates the surface weeds. It prevents the loss of moisture by making a fine "mulch" of earth on the surface. It loosens the surface soil to a depth of four to five inches by breaking the earth. A small *Karabadi* is used for weeding and thinning the kodra plants in the fields. The instrument is in every way suitable for light ploughing of the soil.

THE DANTAL

This implement is another form of harrow. It has six pins which are fixed in a thick wooden body thirty six inches long. The pins are arranged six inches apart from one

another. They are 18 inches long and are tipped with sharp-iron points. The pole is made of teak and the body and the pins are made of Babul. It is specially used for weeding and thinning out Kodra mixture. It is worked both in the direction of the length and of the breadth of the field. It is also used for muddy rice fields before transplanting the paddy, for harrowing purposes. It penetrates the ground two to three inches deep. It costs Rs. 5/- and lasts for about five years. There are small as well as big *Dantals*.

THE TARFEN

A heavy *Dantal* with three pins tipped with sharp iron bars is called *Tarfén*. It is used in combination with a seed drilling instrument known as *Orani*. The *Tarfén* prepares the rows in the field wherein the seeds are sown with the help of *Orani*. The *Tarfén* costs Rs. 6/- and lasts for 5 years.

THE ORANI

The *Orani* is a very ingenious instrument. It is simple and at the same time very useful to the agriculturist. It has a bowl shaped head piece made of Rayen. This bowl has three holes to which are attached the ends of the three hollow bamboo poles linked with the three pins of the *Tarfén*. The pins of the *Tarfén* are one foot apart. They go four inches deep into the soil and prepare the furrows. Simultaneously with this process seeds are dropped into the bowl of the *Orani*, and pass on to the furrows through the three poles. Usually the Kodra mixture, the Bajari and Juwar are sown by this process. The *Orani* costs Rs. 2/- and lasts for about 6 years.

SAMAR OR THE PLANK ROLLER

After ploughing the land or after sowing the seeds, a *Samar* or a big plank of wood, usually eight feet long, one foot broad and one inch thick is dragged over the field. It levels and presses the land—surface, covers the seeds and crushes the small clods of earth to dust. It is made of Babul or wood. It costs Rs. 2/- and lasts for 6 years.

JANSALI

This is a very light instrument having many wooden pins in its head, which is six feet long. The pins are arranged one or one and a half feet apart from one another. It is drawn lengthwise and the breadthwise to prepare rows for the transplantation of tobacco. At each crossing a tobacco plant is planted. The instrument costs one rupee and lasts for 5 years.

THE CART

A cart is eight feet long and two feet wide. It costs Rs. 125/- and lasts for 10 years. Of course the wheels require constant repairing.

OTHER MINOR IMPLEMENTS

The axe is made of iron with a wooden handle and costs one rupee and lasts for 4 years. It is used for cutting woods. Another instrument, generally of the shape of axe, is called Kodaro and is used for digging the land.

THE KHARAPADI

The Kharapadi is a very small instrument of the shape of a sickle, but with a sharp edge only at the flat point. It is used for weeding operations in the fields. It costs four annas and lasts for three years.

The Sickle is used for cutting the grass and crops of the fields. It costs half a rupee and lasts for three years.

A big sickle usually two feet in length, when is attached to one end of a long bamboo seven to eight feet in length, is called a *Vansi*. It is used for cutting the high branches of trees and drawing bushes from the thorny hedges. It costs one rupee, and lasts for six years.

A flat square iron plate with a wooden handle three feet long is known as *Pavdo*. It is used for collecting dust on the surface, collecting manure in the basket and spreading the manure in the field. It costs twelve annas, and lasts for six years.

SCOPE FOR FOREIGN IMPLEMENTS IN THE TALUKA

"After seeing for myself what is used and what have been suggested for use, I am obliged to conclude that there is not

much scope for improved implements under existing conditions".¹ This was the opinion of Dr. Voelkar in 1898. After a study of various implements used in agriculture, it may be observed that there is a very limited scope for the introduction of foreign implements in the agriculture of this *taruka*. The tractor is useless as no fresh lands are available for breaking. Only scattered pieces amounting to 219 acres are lying fallow which may be taken up for cultivation. The iron plough may be advantageously used in the cultivation of tobacco, sugarcane, and vegetable products which require deep ploughing. The indigenous wooden plough is no doubt equally useful for the purpose, but it costs extra labour in the shape of extra tilling. Except for this purpose, the iron plough is useless for many reasons. Unlike the wooden plough, it sticks to the soil, and hence the soil is puddled and loses its texture. Again being heavy, it causes extra unnecessary strain to the bullocks. It costs from Rs. 30/- to Rs. 35/- as against Rs. 10/- for our wooden plough, and an average farmer cannot afford such a capital expenditure. It consists of many parts and, if any part breaks, the village smith cannot easily repair it. If they are imported in large numbers or made in a local factory, the village smiths and carpenters would lose much of their income. It is not capable of being easily handled by illiterate and ignorant farmers. Again the peasant very often prefers shallow to deep ploughing to retain enough moisture in the soil for his winter crops. "I cannot help suspecting that the system of shallow ploughing, as practised by the Native and his aversion to ploughs that turn over a broad slice and form a wide furrow, may have something to do, with this matter of the retention of moisture and that the effect of deep ploughing would too generally be to lose the very moisture the cultivator so treasures".² Hence it is not advisable to import iron ploughs to supersede the indigenous ones.

If for ploughs of new design there is little room, there is still less room for more expensive and complicated imple-

¹ Report on the Improvements in Indian Agriculture, by Dr. Voelkar, J. A., page 217.

² Ibid, page 43.

ments such as seed drills, mowers, reapers, threshing machines etc. It is hardly possible that a cultivator having an efficient cheap implement at hand would go for a costly heavy implement. "The native seed drill will strike everyone who sees it at work as being wonderfully efficient and leaving little to be desired".¹ Reaping of corn though a slow process, gives employment to many labourers in the villages. The men, women, and children squat down in lines, cut handful of corn at a time and lay them in bundles on the ground. Threshing is done by trampling the straw under the hoofs of bullocks. This process protects straw from breaking into pieces and gives employment to bullocks. Similarly winnowing is done by two persons, one of them blows the wind with a thick piece of cloth whose two ends are tied to two pillars, and the second one pours the corn gradually from a basket. Thus the indigenous methods cost nothing or very little at all, and is not advisable to replace them by foreign ones, however labour-saving they may be.

¹ Report on the Improvements in Indian Agriculture, by Dr. Voelkar, J. A., page 223.

APPENDIX A.

A summary table of agricultural implements possessed by an average Patidar farmer in the taluka.

No.	Name of the implement	Cost Rs.	Duration Years
1	A Plough	10/-	6
2	A Harrow	5/-	6
3	A Dantal	5/-	5
4	A Tarfen	6/-	5
5	An Orani	2/-	6
6	A Sammar	2/-	6
7	A Jansali	1/-	5
8	A Cart	125/-	10
9	An Axe	1/-	4
10	Four Kharapadies	1/-	3
11	A Vansi	1/-	6
12	Four Sickles	2/-	3
13	A Pavda	1/8	6
			162/8

CHAPTER IV
ECONOMICS OF CULTIVATION
SECTION C.
AGRICULTURAL HOLDINGS

NUMBER OF HOLDINGS IN THE TALUKA

The following table gives the number and size of the holdings of 72 Government villages in the taluka in the year 1901 and 1921. The figures within brackets are percentages of the total holdings in that year.¹

Size of holding	NUMBER OF HOLDINGS IN—		Percentage of Increase (+) or decrease of holdings in 1921 since 1901	
	1901	1921		
5 acres and below	7,740 (58)	19,740 (82)	+	125
6 to 25 acres	5,107 (38)	8,916 (16)	—	23
26 to 100 acres	570 (4)	432 (2)	—	3
10 to 500 acres	80	29	—	
50 acres and above				
Total	13,447 (100)	24,117 (100)		79
Total area acres	94,660	92,689		
Average holding acres	7	3.8		

INTERPRETATION OF THE FIGURES

The table shows many changes between 1901 and 1921. Firstly, the total number of holdings increased during the period by 79 per cent. Secondly, since the total area in 1901 and 1921 were almost the same, the increase in holdings naturally was accompanied by an increase in the sub-division of holdings. Thus the average holding which was 7 acres in 1901 was reduced by almost half to 3.8 acres in 1921.

¹ The above figures (except the percentage figures) are taken from the Statistical Atlas of the Bombay Presidency, 1926.

Thirdly, holdings of the smallest size i.e. 5 acres and under, increased by 125 per cent. while holdings of all other sizes decreased. Fourthly, in 1901 holdings of 5 acres and under were 60 per cent. of the total number of holdings, while they were 82 per cent. of the total in 1921. Figures for later years are not available, but if sub-division of holdings has proceeded at the same rate during the last 15 years, as it did in the earlier two decades, the size of the average holding to-day should be somewhere about 2 acres.

CAUSES OF SUB-DIVISION OF HOLDINGS

Various causes may be ascribed for the increase in the division of holding.¹ The general law of inheritance in India prevails in the taluka too, that all sons are entitled to equal shares in their father's property seems to be the main cause of the evils. Secondly, the total population of the taluka increased by 4.4 per cent. between 1901 and 1921. The increase in males was faster than in females in the ratio of 3 to 1. This also tended to increase the number of holdings. Thirdly, this tendency has been accentuated by the sale or mortgage of land under stress of want of money. There seems to be general opinion in the taluka that every year the land that passes into the hands of non-agriculturists is increasing due to the poverty of the masses. This has the worst effect on the sub-division of holdings, as the remaining land is divided among the sons of peasants into still smaller holdings. Fourthly, in part, the increase in the number of holdings has been due to the gifts of land to temples, Panjarapoles and

¹ "By Sub-division, we mean, the distribution of land of a common ancestor among his successors in interest, usually in accordance with the laws of inheritance, but sometimes affected by voluntary transfers amongst the living by sales, gifts or otherwise."

Royal Commission of Agriculture in India, 1927, page 129.

Thus a man's holding of 30 Bighas of land, if is divided equally among his five sons, each one receives a holding of six Bighas,

"Fragmentation is quite different from sub-division and refers to the manner in which the land held by an individual is scattered throughout the village area plots separated by lands in possession of others." Report of the Royal Commission of Agriculture in India, 1927, page 129.

other charitable institutions. A few acres of land are reserved in each village of the taluka for artisans like Dheds, Bhangis, Brahmins, etc. Such lands are known as *Pasayatas*.

Sub-division of holdings in itself is not bad. "It is inevitable in all countries having a population of peasant proprietors".¹ It effects equal distribution of property among the people. Again large farms are not always more paying than small ones. "Many people and even Indian Economists seem to think that if the available land is divided into larger farms, India and Indian agriculture will be more prosperous, and that the difficulties of the farmers will disappear. Though it may be conceded that larger holdings will, to some extent, help individual farmers by way of providing him with more work, the panacea of larger holding cannot do away with his other economic difficulties nor can it increase the total output of the country. Larger farms under seasonal agriculture means extensive rather than intensive farming and less output per acre".² Sub-division of holding is bad only when the plot of land becomes of uneconomic size in which case agriculture is rendered costly and unremunerative.

FRAGMENTATION OF HOLDINGS

Every son of a farmer insists on an equal share in each plot of land owned by his father. This of course, preserves for each son every sort of land—suitable for both Kharif and Rabi crops—and thus protects him from the calamities of nature. But, unfortunately, while insisting on a share from each plot, he does not see that the portion of each plot of land that he gets is too small for efficient cultivation. So a cultivator's holding is divided into smaller pieces of land which are scattered all over the village.

In our inquiry, we found that, fragmentation was excessive in villages to the east of Borsad (second group). The result was that many small fragments had remained uncultivated as it was impossible to carry agricultural operations on them. When lands are not too small for cultivation,

¹ Study of Rural Economy in Gujarat, 1931, by Dr. J. M. Mehta, page 46.

² Principles and Practice of Farm Costing with Farm Studies, 1933, by P. C. Patil, page 24.

much of the land and labour are wasted in hedges and boundaries. The fragments being scattered widely much time, money and energy are wasted on their management. Small fragmentary character of individual plots has discouraged the people from attempting improvements. "In many cases this presents grave difficulties to effective cultivation even by existing methods and offers a fundamental obstruction to the introduction of improved technical methods or economic organisation calculated to increase the quantity and value of the outturn or to cheapen its production".¹ Again, crops are not properly watched and great damage is caused by stray animals. The result is that agriculture has become less and less profitable. "The total effects are great and it is only when the burden is removed, that the full results, this evil practice has produced, are revealed".²

METHODS TO CHECK THE EVIL

Various methods have been suggested to arrest the evil of sub-division and fragmentation of holdings. A bill for the consolidation of small holdings in the Presidency was introduced in the Bombay Legislative Council in 1925 by Sir Chunilal M. Mehta. But people vehemently protested against the bill, as it was likely to throw many of the small holders off their lands on which they subsisted. The bill was therefore withdrawn. In the taluka also there is no possibility of consolidation of holdings by the Legislation. If we consider 20 Bighas as necessary to constitute an economic holding, 33 per cent of the cultivators are likely to become landless, as they would be compelled to merge their smaller holdings into the larger ones of their neighbours.³ Again, enforcement of consolidation by legislation would create petty quarrels among adjoining proprietors. We therefore, see no prospect of such consolidation except by the spontaneous co-operation of the cultivators themselves through Co-

¹ Agricultural progress in Western India, by G. Keatinge, page 69.

² Report of the Royal Commission on Agriculture in India, 1927, page 135.

³ Vide Chapter 4, Section F, "Economic Holding".

operative Societies started for the purpose. Our opinion is strengthened by the success of voluntary consolidation through Co-operative Societies in the Punjab. There is a great need for an early establishment of these Societies on the Punjab lines in the villages of the taluka. A propaganda should be started to apprise the cultivators of the serious evils of intense fragmentation. No doubt illiteracy is a serious handicap, but in spite of it, progress can be achieved, if the cultivators are properly made to know the evils of fragmentation. Mr. Kumarappa suggests, "there is one method other than consolidation, by which the farmers do, to some extent mitigate, the evils of fragmentation, and that is, by taking adjoining land on rent or on crop share and giving away the remotest fields to other persons whose lands they may be adjoining".¹ But this method could only succeed within narrow limits as the richness of land varies from piece to piece and two pieces of varying fertility cannot be merged into one. Again, such a concurrence takes place only when both the parties realise the benefit of consolidation. If one of the owners has a big plot of land, he would not take on rent or crop share the adjoining smaller piece nor would he lease his land to other farmer. Another obstacle is that a needy cultivator would be asked a high rent for the adjoining plot. So there is little chance of consolidation being effected on large scale automatically in this manner. It must be achieved by the formation of Co-operative Societies for the purpose. The progress achieved through them may be slow, but would be sound and permanent.

¹ A Survey of Matar Taluka, 1931, by J. C. Kumarappa, page 23.

Areas in acres under different crops in the taluka. (000s omitted.)
 Percentage figures are given within brackets.¹

1	Food crops					Commercial crops			Fodder crops.			Grand total
	Bajri	Rice	Kohra	Bavlo	Pulses	Tobacco	Oil seeds	Cotton	Juwar	Grass	Misc Vegie	
1 1919-20 13 (20)	6 (5.3)	29 (25)	3 (2.6)	12 (10.0)	11 (10)	3 (2.6)	6 (5.0)	6 (5.0)	12 (10.0)	8 (7)	3 (2.5)	116 (100)
2 1920-21 28 (24)	6 (5.3)	23 (20)	3 (2.6)	10 (8.5)	13 (11.0)	3 (2.1)	6 (5.0)	6 (5.0)	15 (13.0)	8 (7)	2 (1.5)	117 (100)
3 1921-22 29 (25)	6 (5.3)	22 (18.5)	5 (4.3)	12 (10.0)	13 (10.5)	3 (2.0)	4 (3.1)	4 (3.1)	14 (11.5)	10 (8.5)	2 (1.5)	118 (100)
4 1922-23 28 (23)	5 (4.0)	24 (20.0)	5 (6.0)	11 (9.0)	12 (10)	3 (2.5)	5 (4.0)	5 (4.0)	15 (12.5)	10 (8)	2 (1.0)	120 (100)
5 1923-24 28 (28)	5 (4.0)	24 (20.0)	5 (6.0)	11 (9.0)	12 (10)	3 (2.5)	5 (4.0)	5 (4.0)	15 (12.5)	10 (8)	2 (1.0)	120 (100)
6 1924-25 26 (22)	5 (4.0)	24 (20.0)	4 (3.5)	11 (9.0)	14 (11)	4 (3.6)	5 (4.0)	5 (4.0)	13 (11.0)	10 (9)	3 (3)	119 (100)
7 1925-26 28 (19)	6 (5.0)	22 (21.0)	5 (4.0)	10 (8.0)	14 (11)	7 (5.0)	6 (5.0)	6 (5.0)	15 (12.0)	10 (8.0)	3 (2)	125 (100)
8 1926-27 27 (28)	8 (6.0)	21 (17.0)	5 (4.0)	11 (9.0)	11 (9)	4 (4)	5 (4.0)	5 (4.0)	16 (14.0)	11 (9.0)	2 (1)	121 (100)
9 1927-28 28 (20)	8 (7)	21 (18.0)	5 (4.0)	14 (11.0)	15 (12)	3 (3)	4 (3.0)	4 (3.0)	17 (14.5)	11 (7)	2 (1.5)	123 (100)
10 1928-29 23 (20)	8 (7.0)	32 (28.0)	5 (4.0)	*	15 (13)	3 (2.6)	3 (2.6)	3 (2.6)	14 (12)	10 (9)	2 (1.7)	115 (100)
11 1929-30 21 (18)	8 (6.0)	28 (23.0)	5 (4)	*	26 (22)	4 (4)	3 (2.0)	3 (2.0)	14 (11)	11 (9)	1 (1.0)	121 (100)
12 1930-31 23 (20)	8 (6.5)	32 (28.0)	6 (5)	*	17 (15)	3 (2)	3 (2.0)	3 (2.0)	14 (11.5)	11 (9)	1 (1.0)	118 (100)
13 1931-32 26 (22)	7 (6)	30 (26.0)	5 (4)	*	17 (14)	3 (3)	3 (2.0)	3 (2.0)	16 (13)	11 (9)	2 (1.0)	121 (100)
14 1932-33 25 (21)	8 (7)	33 (28.0)	4 (3)	*	16 (13.5)	4 (3)	3 (2.5)	3 (2.5)	15 (13.0)	9 (7.5)	2 (1.5)	120 (100)

¹ These figures are received from the Taluka Agricultural Development Association, Borsad.

* These figures are included under the head of "Kodra". Separate figures are not available.

CHAPTER IV

ECONOMICS OF CULTIVATION

SECTION D.

DESCRIPTION OF CROPS

STATISTICS OF THE CROPS GROWN IN THE TALUKA

We give in the adjoining Table statistics of the crops that are grown in the taluka. These crops may be conveniently divided into three groups:—(1) Food crops; (2) Commercial crops; and (3) Fodder crops.

FOOD CROPS

Food crops which form the main produce of agriculture occupy 60 per cent. of the taluka land, of which 27 per cent. is devoted to the coarse grain known as Kodra (including Tuer), 20 per cent. to Bajari, 6 per cent. to Rice and the remainder to Bavto and other minor foodstuffs. Formerly these crops used to occupy nearly three-fourths of the taluka land, but in recent times commercial crops have increased relatively to food crops. Almost all the foodstuffs except tuer are consumed by the people and still the taluka is not self-sufficient. A large quantity of foodstuff is imported every year to mitigate the deficiency of local food supply. Anklav alone, a big marketing village, surrounded by about 20 villages imports every year foodstuffs worth more than three lakhs of rupees of which rice alone amounts to Rs. 80,000. The chief reason is that increasing portions of land are set apart every year to raise tobacco and other commercial crops. The low prices of corn and the increasing demand of the peasants for immediate cash have discouraged the cultivators from growing food crops. The standard of living of the peasant has risen and he is getting accustomed to decent clothes, good houses, good food and outdoor enjoyments. Hence he grows commercial crops which bring him cash with which he can meet these wants.'

COMMERCIAL CROPS

The commercial crops occupy nearly 20 per cent. of the taluka land of which 14 per cent. is devoted to tobacco, 3 per cent. to cotton and 3 per cent. to oil-seeds. The extension of marketing and transport facilities, the constant and steady demand for these crops, the high prices which they fetch and the ready cash which is obtainable against them have tempted the cultivators to grow commercial crops in increasing quantities on their fields. There is a general tendency among the farmers of this taluka to grow these crops as much as possible and to devote the residue of their land to other crops. Consequently the percentage of taluka land occupied by commercial crops has doubled during the last 40 years. But the farmer has not been able to make as much progress as he would have wanted. For, the cultivation of commercial crops is an expensive proposition. It is intensive and requires heavy manuring which an average farmer can hardly afford. If he uses his scanty farm manure for these commercial crops, he does not have enough for his food crops which consequently suffer. These crops are again very susceptible to plant diseases, frost, and other calamities and hence they require great skill in their handling. They need more water, and harder labour than food crops. Their prices are not constant and often the cultivator is badly deceived. Thus the cultivator has to face many risks if he desires to grow commercial crops. The taluka peasant, however, steadily marches forward gradually overcoming all these obstacles.

This attitude on the part of the cultivator has been subjected to serious criticism. It is said that food crops are always insufficiently manured with the increase in these crops. This remark is fully justified as the taluka cultivator has been observed to provide less and less manure for food crops. The result is that there is a decreasing output of food crops every year.¹ But this does not imply that the farmer should be discouraged from growing commercial crops. The evil of scarcity of manure for food crops should be mitigated

¹ See Chapter 4, Section F. Problem of diminishing yield and soil exhaustion.

by the supply of credit through Credit Co-operative Societies to purchase fertilisers. Again critics maintain that the money obtained from the sale of these crops are squandered on unnecessary luxuries e.g. foreign articles like fashionable cloths, sugar, trunks, etc. The money which ought to be spent on food is unnecessarily wasted on these articles at the cost of their physical welfare. These contentions are true and the peasant in our villages is unable to discriminate between his different expenditures. Again he would have been at an advantage if he had not been a purchaser of his necessaries but he grows them himself as he did in good old days. He is not businesslike. Often he buys in the dearest market and sells in the cheapest. But these are arguments against the extension of exchange economy into our village life and against all increases of the farmer's cash income. We think, a farmer cannot be prevented by any kind of State regulation from growing whatever crop is profitable to him. And it is probably too late to-day to protest the extension of exchange economy. However the evils that have been indicated should be tackled in other ways by the spread of education and the development of rural organisations.

The value of commercial crops cannot be under-estimated. It has enabled many a skilful farmer to increase his income and to raise his standard of living. Many a peasant who led a hand to mouth existence a few years ago, owe their present high position in society to the introduction of these crops. It has enabled them to purchase land, to build decent houses, to purchase fine clothes and to increase other amenities of life. The higher return per acre from commercial crops has enabled the people of the taluka to mitigate the evils of increasing pressure of population on land.

FODDER CROPS

Fodder crops occupy nearly 24,000 acres of land or 20 per cent. of the total cultivated area in the taluka of which 12 per cent. is devoted to Juwar and 8 per cent. to grass. One should not be surprised at the reservation of one-fifth of the total cultivated land for fodder when he realises that ample fodder facilities alone account for the excellent cattle

for which the taluka is so famous. Juwar is considered a nutritive fodder for bullocks and is specially grown for it (and not for grain) on about 10,000 acres. Every field is bound by a long strip of reserved area known as *Shedha* and is used for growing grass. Besides much hay is obtained from Kodra, Bavto, Rice and Bajari crops. The problem of fodder is fully discussed in section A of Chapter 4.

DESCRIPTION OF CROPS

KODRA

Kodra is an inferior type of food crop, sown most extensively in the taluka. It is a mixed crop. The usual mixture is Sesame, Tuer, Sheria, Bavto and Cotton. In damp fields it is mixed with Rice. It occupies about 45,000 acres or 37 per cent. of the total cultivated land in the taluka.

The bed for the mixture is prepared early in June, by several harrowings. Soon after it rains, the mixture is sown by the three cultured drills or Orani. The seeds are then covered with plank-roller. It is hand weeded twice and hoed thrice. It ripens in October. The Kodra is then reaped with sickle, exposed to sun for a week and threshed by trampling under the feet of bullocks.

Kodra is the chief food of the people of the taluka. Even though the quantity produced is very large, not a single grain of it is exported outside the taluka. It is wholly consumed by the peasants. Being an inferior type of corn, it has no demand from outside. During the last few years, it has been displaced to a certain extent by rice. A few years back only the rich and well-to-do used to buy rice. The poor only ate Kodra. Nowadays both the rich and the poor try to eat as much of rice as possible. However, it will never be fully displaced by rice. The light goradu soil of the taluka is so suitable to Kodra, that with little care and small rainfall it can produce a good supply of this corn. But paddy can grow only on damp and low lying lands.

Before we describe other crops that are mixed with Kodra, a word should be said about mixed cropping. The cultivators have followed this system to secure themselves against

uncertainty of the seasons. In case a Kharif crop fails on account of an excess of rain, the Rabi crops would flourish and the fields would not remain fallow. In a normal year both the Kharif and rabi flourish on the soil and the cultivator harvests crops throughout the year. He would harvest Sesame in September, Kodra and Rice in October, Tuer in January and February and Cotton in March and April. Thus the land is fully utilised and the cultivator receives more income from mixed cropping than from a single crop. In a taluka where the average amount of land per head is only one acre, so many crops grown at a time on a single field have ensured maintenance of the farmer's average income.

TUER

Tuer is mostly grown with Kodra, and sometimes with Bajari. Of all the pulses, it is most abundantly grown and occupies nearly 10 per cent. of the total land. Much of the tuer produce is exported outside. It is a food crop. It is split, boiled and eaten as *Dal* in various ways. The outer husk of the seed is known as *Chuni* and is a favourite food of milch cattle. The leaves and pod shells are also used as fodder for cattle. The dry stalks are used as fuel. Tuer is a rabi crop. Though it is sown early in June, it blossoms in December and ripens and harvested in February.

RICE

Rice could only be grown when water supply is abundant. It is specially grown in Kyari lands and sometimes mixed with Kodra in damp fields. The rice grown in the taluka is of poor quality. The drainage water running from the taluka have greatly facilitated the growth of rice in the taluka. It occupies 8,000 acres or about 6 per cent of the total cultivated land in the taluka. However, a large amount of rice is imported into the taluka every year.

Rice on Kyari land is transplanted in August during which month the fields must remain flooded with water. It requires little weeding. It is harvested in October.

BAJARI

Bajari is the chief food of the people and occupies 25,000 acres or 20 per cent. of the total cultivated land in the taluka. It is a light soil plant and is confined to mixed and light soils of the taluka. It flourishes best under drizzling rain and dry climate. It turns yellow in wet season. It is mixed with Guwar, Math and Adad. The land is ploughed twice with *Tarafen* or light plough and harrowed once after it has been watered by the rain. The seeds are sown in July. It is cut close to the ground, left lying on the fields for some days and then bound into bundles. The ears of the corn are cut off from the bundles and are trampled under the hoofs of bullocks on the threshing floor.

TOBACCO

The Charotar area in which this taluka is situated is famous for the production of tobacco in the whole of the Bombay Presidency. Nearly 40 per cent. of the area under tobacco in the province is located in Charotar and Borsad has the highest share in this percentage. The area under the crop in the taluka is increasing every year. To-day it occupies nearly 14 per cent. of the total cultivated land as against 7 per cent. in 1894.

As it is a paying commercial crop with a steadier market and as it is suited to the goradu and mixed soils of the taluka, it is grown in increasing quantities year after year.

The tobacco requires rich land, sufficient water and manure and great care from the farmer. To a great or small extent these requisites are supplied by the peasants of the first and second group. There is still however, a deficiency of manure in every season. Scarcity of water is also felt during times of scarce rainfall. In the villages of the third group the soil is not rich and the people are poor and backward. There are no irrigation facilities. Naturally the costly tobacco crop is not grown there.

Tobacco is a rabi crop, but its seed bed is made early in July. The fields are ploughed six or seven times. 10 cart loads of farm manure are required per Bigha. Goat manure is occasionally used. Some cultivators have recently begun

using Nitrate of Soda. The plants are transplanted in the beginning of September when there is a drizzling rain. The field is weeded once but hoed as many times as possible till the middle of December. About eight leaves are kept on the plant and the extra leaves are nipped off every ten days. The plant is not allowed to flower and bear fruits except in the case of some selected ones which are allowed to flower to provide seeds for the next season. Every effort is made to keep the plant stunted in size so that the leaves may expand and become rich and heavy in stuff. The majority of the taluka tobacco fields are dry. During scarce rain, those who are able try to irrigate their fields. A few of the cultivators irrigate their fields even during normal years, and they receive the fruit of their labour in the form of greater output. Experiences in the adjoining Baroda State villages like Dharmaj and Bhadran tell us that output per Bigha can be increased to 40 maunds as against 10 maunds in the taluka by means of irrigation, and heavy manurings. The farmers of the second group have realised the importance of intensive cultivation of tobacco. Attempts, however, should be made to bring it within the reach of the farmers in all groups of villages.

The tobacco ripens in January and February. The ripe leaves which are yellowish in colour are cut off, dried and broken into small pieces. Sometimes the whole leaves are bound up into small bundles immediately after they have been removed from the plants and dried under the shade of *Mandap* or shed constructed for the purpose. While the broken pieces turn yellow in colour under the heat of the sun, these bundles turn black under the shade. The black bundles are known as *Kalui* and are exported to Aden. They fetch about 25 per cent. more value than the broken tobacco known as *Bhukko*. *Bhukko* is exported to Marwar, Bombay and Calcutta.

SESAME

Sesame is grown everywhere in the taluka on light soil. It is scarcely grown alone but is always mixed with Kodra. It occupies 4,000 acres or 3 per cent. of the total cultivated

land of the taluka. Its cultivation has been generally discouraged during the last 8 years by the damage caused by insects known as *Kataras* who eat away the plant during its infancy. The *Kataras* grow up in the middle of July and disappear automatically by the middle of August. Peasants, unfortunately, have as yet discovered no remedy against this pest of insects. Both the white and black varieties of sesame are grown in the taluka. The crop is sown in June and harvested in the last week of September.

Sesame is an important commercial crop with a world wide market. Its oil is used for cooking, in medicines and in various chemical processes. Its cake is highly nitrogenous and used both as fodder for cattle and manure for the fields.

COTTON

Cotton occupies nearly 3 per cent. of the total cultivated land in the taluka. Its cultivation, however, varies according to its demand in the market. The type of cotton which is grown in this taluka and known as *Rogi Kapas* is inferior to Broach cotton and fetches a lower price. As it is affected by germs and diseases and also by frost, the peasants have little incentive to grow it unless it has a high demand in the Bombay Market. Hence the cotton crop has always occupied a subordinate place among the crops of the taluka and is grown along with Kodra and Bajari. Of every three furrows one only is reserved for cotton. The seedlings being fuzzy or mixed with cotton are rubbed against coarse strings in a cot and are mixed with wet earth before they are sown by drill or by hand. It is a rabi crop and though sown in June is harvested in March and April. If selected seeds are sown, diseases controlled and a steady market ensured, its cultivation would be decidedly more paying than that of other food-stuffs in the taluka.

JUWAR

Juwär is specially a fodder crop and occupies nearly 12 per cent. of the total cultivated land in the taluka. It is a light soil plant and naturally its cultivation is greater in the third group than in the first and second group of villages. The

kharif Juwar is sown by the end of July on a well ploughed soil. It is hand-weeded once and hoed thrice during the initial stages. The people do not care for the grain of Juwar and do not allow it to grow at the expense of the nutritive element in the hay of Juwar. The plants are cut off or uprooted at the beginning of October, exposed to the sun and are tied in small bundles, each weighing 10 to 15 seers. In case of rabi juwar, the field is kept fallow till September, is sown in October and is harvested in December. It is thinner and sweeter than the kharif crop and hence is more valued. Some farmers raise it in summer by irrigation. The crop is sometimes mixed with Mag, Math and Adad. It is an emergency crop in the taluka. Whenever the rain is small or precarious it is immediately sown in the fields, as it requires little water.

CHAPTER IV

ECONOMICS OF CULTIVATION

SECTION E.

COST OF PRODUCTION

SURVEY METHOD

We followed what is known as "Survey Method"¹ in our inquiry into the cost of production of crops. We approached the cultivators in each village to get accurate facts and figures and to make personal observations on the spot. Studies of cost of production of agricultural products are done in two ways. One may study each individual crop separately or may study all the crops grown by a farmer on different fields. An Indian cultivator is not able to supply information regarding the cost of production of each individual crop or regarding his expenditure on each field. He cultivates many fields or plots of land and each field grows more than one crop. He does not keep a separate account for each of his fields. But he could supply fairly definite data on his total expenditure on all fields which he cultivates. Naturally, we thought it proper to study the total of all his agricultural operations in relation to all his fields. The farm of the cultivator or the total amount of land that a farmer cultivated was taken as a unit for costs and receipts. "It is true, this method does not supply data as to which crop or enterprise pays more. Yet it supplies quite accurate information to compare whole farms and the economic condition of farmers".² An intensive study of the cost of production of each crop requires day to day recording of expenditure and can be carried out only by those whose main business is to study cost of production of different crops. As we have to

¹"In this method estimates of costs and receipts are collected either by sending questionairie forms for being filled in by the farmers or the investigator visits the farms and records the informations supplied by the farmers in such visits of inquiry," Principles of Farm Costing with Farm Studies, by Rao Bahadur P. C. Patil, page 3.

² Ibid, page 29.

deal with all the aspects of an agriculturist's life, we did not think it possible to undertake such a detailed investigation in each and every case. However, the value of our method has been proved by experienced economists who have worked in this field and known its difficulties. Rao Bahadur P. C. Patil who had studied scientifically 14 farms of different villages continuously for three years from 1928 to 1930, says :—“Since it is found that variations due to seasons and prices make much more differences in the incomes than by careful collection, it seems more desirable to handle larger number of farms with less meticulous methods than fewer farms with absolute precision. There is therefore no doubt that large scale cost study on more utilitarian lines will give a better picture of the income and costs than intensive study of each of the plots on a few farms”.¹

ITEMS OF COST OF PRODUCTION

The farmer's cost of cultivation can be conveniently divided into the following heads. This is not a scientific classification. But it tallies with the classification that the farmer makes in his mind.

1. The bullock.
2. Personal servant.
3. Hired labour.
4. Seed.
5. Manure.
6. Implement.
7. Rent.
8. Land Revenue.
9. Irrigation.

“The agricultural cost accounting is a new development in Agricultural Economics, and even America and Europe can present very few complete studies in this new field”.² Information that is available at present on the subject is of an approximate nature. For all investigators are not agreed upon the particular items which should be entered in the

¹ Principles and Practice of Farm Costing with Farm Studies, by Rao Bahadur P. C. Patel, page 29.

² Ibid, page 1.

schedule of cost of production. Whereas general opinion in England is against including wages of the family labour, economists in U. S. A. are in favour of including them in the cost of production. Similarly, the two countries differ with regard to the inclusion of interest on capital in the cost of production. In a general survey of a taluka like this, we did not like to trouble ourselves with the complexities of the arguments, but treated it in the most convenient way, including only those points which were really believed as factors of cost of production by the agriculturists and which they are required to pay for. Thus we have included expenditure on bullock, personal servant, hired labour, seed, manure, implement repairs, rent, land revenue, and water supply in the cost of production.

We know that this schedule of cost of production is open to certain criticism, e.g. it does not include depreciation charges of bullocks, and implements nor does it include interest on capital and cost of labour of the family members. Again our schedule includes charges on account of rent and land revenue which from a purely economic point of view ought not to be included in it. Rent is not an element in the cost of production but a differential due to the indestructible qualities of the soils. Similarly, land revenue is a tax on the surplus and not on actual cost of production. We would point out that a strict adherence to economic definition of cost was not possible in our case where large number of families were examined. Calculations of depreciation charges of bullocks and implements and other agricultural property and interest on capital of the farmer would have entailed a very minute examination of the inventory of the property of a cultivator's family and its valuation. One of the facts that we commonly came across in our survey was that the cultivators themselves did not know or remember the exact values of their property. Even the simple information which we have collected for our thesis, was gathered from them with great difficulty and after long persuasion; and it is doubtful whether we could have succeeded in getting a true estimate of the depreciation charges, had we included them in our cost of production schedule. With regard to rent and land

revenue we want to emphasise the fact that both the items, though from the standpoint of pure economic theory are not cost of production, are regarded as cost of production by the cultivator. The rigidity of the payment of rent and land revenue is such that they form compulsory direct charges on the gross income of the agriculturist to be paid whether he receives a net profit or suffers a loss. He has often to pay these charges by borrowing. It is reasonable therefore that we should include in our survey these items in the cost of production.¹ We have not included in the schedule of cost of production the wages of the family members. Here we are fully endorsed by Rao Bahadur P. C. Patil. "Since it is proposed to find what wages farm families make, the question of including wages of the family members does not arise".² The cultivator in this taluka as elsewhere in India carries on agriculture not because he is interested or that he amasses large wealth from it, but because he and his family can get employment to eke out their livelihood. Hence our net income of land would be termed 'family labour income' which would include 'net profits of the farmer and the wages for the labour of the farmer and his family'.³

TABLES OF COST OF PRODUCTION

We give below three separate tables of cost of cultivation for the three sub-divisions of the taluka for the year 1933-34.

FIRST GROUP

An average amount of land cultivated by a family in the first group was 15 Bighas or 9 acres whose cost of production by different items was as follows.⁴

¹ U. S. A. and England have also recently come to the conclusion that rent of land is a farm cost'. Principles and Practice of Farm Costing with farm studies, by R. B. P. C. Patil, page 6.

² Ibid, page 6.

³ Ibid, page 9.

⁴ Vide Appendix A, at the end of this section.

No.	Item of expenditure	Expenditure per cultivated holding	Expenditure per Bigha	Expenditure as percentage to the total cost per Bigha
		Rs.	Rs.	%
1	Bullock	68.1	4.5	25
2	Servant	2.4	0.2	1
3	Hired labour	35.2	2.3	12
4	Seed	4.7	0.3	2
5	Manure	46.4	3.1	18
6	Implement	4.3	0.3	2
7	Rent	47.8	3.2	18
8	Land Revenue	46.4	3.1	18
9	Irrigation	11.4	0.7	4
	Total	266.7	17.7	100

SECOND GROUP

The average amount of land cultivated by a family in the second group was 11.5 Bighas or 7 acres and the cost of cultivation by different items was as follows.¹

No.	Items of expenditure	Expenditure per cultivated holding	Expenditure per Bigha	Expenditure as percentage of the total cost per Bigha
		Rs.	Rs.	%
1	Bullock	53.1	4.6	24
2	Servant	6.2	0.6	3
3	Hired labour	26.4	2.3	12
4	Seed	3.6	0.3	2
5	Manure	37.7	3.3	17
6	Implement	3.8	0.3	2
7	Rent	31.5	2.7	14
8	Land Revenue	38.8	3.4	18
9	Irrigation	17.0	1.5	8
	Total	218.1	19.0	100

Vide Appendix A, at end of this section.

THIRD GROUP

The average amount of land cultivated by a family in the third group was 8.6 Bighas or 5 acres whose cost of production by different items was as follows.¹

No	Items of expenditure	Expenditure per cultivated holding	Expenditure per Bigha	Expenditure as percentage of the total cost per Bigha
		Rs.	Rs.	%
1	Bullock	28.4	3.3	29
2	Servant	0.3	0.03	
3	Hired Labour	10.4	1.2	10
4	Seed	1.8	0.2	2
5	Manure	16.7	2.0	17
6	Implement	2.5	0.3	2
7	Rent	27.4	3.2	28
8	Land Revenue	12.5	1.4	12
	Irrigation			
	Total	100	11.6	100

EXPLANATION ON VARIOUS ITEMS OF COST OF PRODUCTION

THE BULLOCK

Agriculture cannot do without the labour of bullocks. Bullocks are the most indispensable factor after the elementary implements; and expenditure on them is the heaviest item in the budget of both the Patidar and Dharala cultivators. Nearly one-fourth of the total expenditure by the Patidar cultivators of the first and second group and one-third of the total expenditure by the Dharala cultivators of the third group, is devoted to maintaining the bullocks. This is certainly a heavy burden on the shoulder of a cultivator. It is already pointed out² that the unemployment of bullocks for about 7 months in a year is the root cause of this trouble.

¹ Vide Appendix A, at the end of this section.

² Vide Section A, of this Chapter.

An economic use of bullocks will relieve the cultivator and lighten his burden of cost of production to a great extent.

PERSONAL SERVANT

An ordinary peasant is his own servant. But some landlord cultivators in the taluka cultivate the land with the help of their servants who are paid wages ranging from Rs. 75 to Rs. 100 a year excluding clothing and shelter. Such zamin-dars are few. So the expenditure on this item is very small in all the sub-divisions of the taluka. It may be observed that agriculture would not pay if it is left to the care and labour of a servant. It requires constant vigilance on the part of the land owner himself and also personal labour.

LABOURS

A certain amount of hired labour is indispensable and even the most self-reliant farmer cannot do without it. Expenditure on hired labour forms nearly one-eighth of the total cost in the villages of the first and second groups and one-ninth in the third. Details of labour charges have been given separately in chapter 5, "Labourers and Tenants".

SEED

Expenditure on seeds forms 2 per cent. of the total for both Patidars and Dharalas. Seeds for crops are easily and cheaply available. But when the seedling plants of tobacco grown in their own fields have been damaged by excessive or scanty rains it is difficult to replace them by purchases from outside. On such occasions peasants have to spend Rs. 4 or 5 per Bigha to get their supply. The expenditure on seeds in the above tables indicates the value of seeds purchased by a cultivator during the season. Generally a cultivator sows the seeds which he has in his home, and whose value seems to have been excluded; otherwise the expenditure on this item ought to have been higher. Generally he does not care to secure his supply till the outbreak of the monsoon when he would purchase them in a hurry from the village shop without paying attention to their cost or quality. It is unfortunate that the taluka peasant does not realise the value of growing

improved seeds on their fields.¹ The Taluka Development Association for Agriculture at Borsad, supplies improved seeds at low prices. But unfortunately, only a few of the cultivators in the taluka know of its existence. Those who know of it, care little to secure good seeds from it. The Association, sometimes, supplies seeds free and always gives free advice to the cultivators. Many who have made use of seeds supplied by this agency have greatly profited. Yet the peasant in general is not anxious to receive assistance from the Association. He has become so unmindful of the value of good seeds that he would not wake up unless an organised and intensive propaganda is carried on. No doubt some energetic cultivators tried to introduce improved varieties of crops prior to the establishment of the Association, but failed to achieve their object for want of proper instruction and guidance. Thus experiments in millets, in juwar, in tobacco and in cotton have met with little success. An experiment was started in 1933-34 at Saijpur under the auspices of the Association to introduce Virginia tobacco into the taluka. A bad frost, however, spoiled the chance of its success. However, it is too early as yet to pronounce a verdict on the chances of their experiments under favourable conditions. Success in agriculture depends to a very large extent on the quality of seeds. Hence as in Western countries, the taluka must have an organisation for the distribution of seeds which will have its agents in all the villages and would supply the best kinds of seeds at cheap prices. The attempt should be made either through the Co-operative Society or through the existing Agricultural Association. The seed distributing organisation should also educate cultivators to grow good seeds from their fields rather than depend for their supply on outside agency. This would save them the cost of seeds even if they were cheaply available. The seed distributing agency, however, should bear in mind the advice of the Royal Commission on Agriculture in India, 1927. "No new

1 "Even in Gujarat where indigenous cultivation is excellent the benefit of selection and choice of seed is not appreciated. Report on the Improvements in Indian Agriculture, by J. A. Voelkar, page 236.

variety should be put out unless it has been thoroughly well established, that it should possess a marked advantage over those already grown in respect either of yield, quality or suitability to special environmental conditions".¹

MANURE

The expenditure of manure is only 18 per cent. of the total expenses which is very moderate compared with the usefulness of the item. Unfortunately, the amount of manure at the disposal of cultivators in the taluka is very small and about 40 per cent. less than their total requirements. An estimate of the manurial requirement of the taluka puts it at about 6,42,000 cart loads while that which is available is only 3,89,000 cart loads a year.

The following table states the annual manurial requirement of the taluka, in cart loads.²

No.	Name of the crop	Cultivated acres 1932-33	Manure required per acre in cart loads	Total manurial requirement in cart loads
1	Bajari	24,971	8	1,99,768
2	Rice	7,815	14	1,09,410
3	Tobacco	15,858	17	2,69,586
4	Cotton sesamum and vegetables	6,300	10	63,000
	Total	54,944		6,41,764

¹ Page 101.

² This and the subsequent estimate of the manurial requirement of the taluka is made according to the instructions of the Overseer of the Taluka Development Association for Agriculture at Borsad.

The crops that are not represented here do not require manure.

The following table gives the total manure available in the taluka.

No.	Name of the animal	No. of animals in 1934-35	Cart loads of manure per animal a year	Total cart loads of manure from all animals
1	Bulls, oxen, He-buffaloes and cows	15,976	5	79,880
2	She-buffaloes	27,162	10	2,71,620
3	Calves of cow and buffaloes	29,015	1	29,015
4	Horses and Ponies	1,235	4	4,940
5	Goats and Sheep	7,997	$\frac{1}{2}$	3,998
				3,89,453

No kind of manure other than the Farm Yard manure is manufactured in the taluka. Oil cakes are sometimes used, but in a very small quantity which would not make a great difference to our estimate. The deficit of the manure could be overcome by an import of fertilisers from outside, but the chief difficulty is the peasant's poverty. What little money he has is spent on purchasing manures for tobacco and other commercial crops and the food crops are left unmanured. The cry for manure is more or less an All-India cry. It is said by famous authorities on the subject that "much of the farm-manure available is burnt as fuel"¹ and hence the scarcity of manure. Leaving aside the condition prevailing in other parts of the country, we would say that the statement is not true so far the taluka is concerned, where the value of manure is perfectly known and where fuel is supplied in abundance by the hedges, tree loppings, cotton and tuer stalks, etc. The farm yard manure is never used as a fuel except in the town of Borsad by a few non-agriculturists and as fire preserver in monsoon in the fields by peasant, which quantity

¹ Report of the Royal Commission Agriculture in India, 1927, page 80.

is very very small. Mr. Bates says of Gujarat, "Here manures are largely used. Cow dung is not burnt".¹ The chief reasons for the scarcity of manure are the carelessness of the cultivator in allowing a large portion of cattle dung and urine to waste and the exports of oil seeds,² food grains, hides and bones in large quantities to foreign countries. This loss is in no way compensated for by the importation of fertilisers.

The commercial crops and the food crops could be produced luxuriantly if they could be liberally manured. The capacity of the soil to recuperate can be increased by improved agricultural methods, soil aeration and the cultivation of green manure crops. The loss of nitrogen and other ingredients of fertility can be largely made up by the application of natural and artificial manures. The Taluka Development Association for Agriculture in Borsad has done some good work on the suitability of different manures for different crops and soils. But its work is still in the experimental stage. The use of artificial fertilisers is not profitable in all circumstances. They injure the dry crops and upset the farmers calculation of costs and receipts. Further they cannot be recommended for wide use (unless an exact formula be made out through research work in the fields for different kinds of soils and crops) for the reason that crops are often grown mixed with each other. If they suit one, they damage the other. Again, they are costly.³

¹ Quoted from, Report on the Improvements in Indian Agriculture, by J. A. Voelkar, page 102.

² In this connection the remarks of Dr. Voelkar are worth consideration. He observes, "Whereas in India, supplies of manure in any form are short, it seems wrong to allow so much manurial to be carried beyond the seas, without endeavouring to establish its value and the importance of retaining it in the country. The oil having no manurial properties is a fitting object for export. But to send away the entire seed or the refuse after removal of the oil is to send away the valuable manurial constituents....., in brief, to export them is to export the soil's fertility People are tempted to export them for ready cash, but they should be made known of the advantages of keeping them at home, which is paying in longer run." Report on the Improvements in Indian Agriculture, page 106.

³ These are costly manures and who is to pay for these? Only crops giving a high return could possibly meet the outlay and owing to low prices of produce the peasants are not encouraged for their use. The day is still distant,

Under these circumstances, the farmer must make use of all the available indigenous manures. "No efforts are made by the cultivator to preserve cattle urine.... either for its manurial value or to safeguard the public health by covering the material with earth".¹ The general truth of the statement cannot be denied, though Patidars as a class pay attention to the principles of sound manuring. "To test them (Patidars) I asked to see what they called well-made manure and soon I was shown well rotted, nearly black, rich manure. The quality of this was such as to convince me that the people at least know what good manure was and how to make it".² The taluka peasants in general, however, should follow the methods adopted in the District of Gurgaon in the Punjab where all kinds of refuse and sweepings and dung are deposited in pits. They should imitate the practice of farmers in Japan and China where there is no organic refuse of any kind which does not find its way back to the fields as fertilisers. Not only is all human waste carefully collected and utilised, but enormous quantities of compost are manufactured from the waste of cattle, houses, swine etc., combined with herbage, straw and other similar waste. The best farm-yard manure is obtained when the solid and liquid excreta of the cattle are preserved together and this can be done if some medium is used to absorb the urine directly it is voided by the animal. For this purpose, litter is best, but waste straw, leaves, weeds and even dry earth may be utilised. Again, the heaps of manures in the manure pits should be so placed and preserved that they get properly compressed to exclude air, and control fermentation.

These heaps should also be protected from the heat and the rain by the construction of *Kachha* shade, so that they may

I believe, when artificial manures can be profitably used in India. Some great change either in the cost of manufacture or in the condition of the Agricultural classes, must take place first."

Report on the Improvements in Indian Agriculture, by J. A. Voelkar, page 117.

¹ Report of the Royal Commission on Agriculture in India, 1927, page 83.

² Report on the improvements in Indian Agriculture, by J. A. Voelkar, page 129.

not be denuded of their valuable constituents. The peasant should bear in mind that fresh farm-yard manure should not be applied to soils. "This is particularly the case in sandy soils where fresh manure may have an injurious effect on the soil texture in making it too open in consequence to which the crop suffers more readily from drought".¹ On the other hand a well rotted mellow manure greatly improves the physical condition of the soil and furnishes humus which acts as a moisture retainer in sandy soils. Good farm-yard manure is complete fertiliser and supplies all the essential requirements for plant growth. Besides, though the cultivators of the taluka recognise the value of tank muds and green manures like hamp, guwar and groundnut, they should not neglect the value of bone meals, night soil and fish manures. If once they realise the value of these manures which are not costly, they would strictly adhere to them. There should be adequate facilities to finance them for purchasing necessary manures through Co-operative Manure Societies. An increase in the cost of this item certainly would be more paying in the long run.

IMPLEMENT

Indigenous implements are cheap and are easily made and repaired by the village smith and carpenter. Consequently the amount and expenditure on this item is only 3 per cent. of the total cost. Other details on implements are given in the section on Implement.

RENT, LAND REVENUE AND WATER

The payments on rent and land revenue form more than 33 per cent. of the total expenditure to a cultivator.² The expenditure on irrigation is very low as agriculture in the taluka is mostly dry. The cultivators in the second group irrigate their tobacco lands to a certain extent and adopt intensive method in agriculture.³

¹ Care and Management of Cattle Manure, Government of Bombay, Bulletin No. 31 of 1923, page 2.

² For details on rent refer to chapter 5 Section B, and for Land Revenue, Chapter 10.

³ For details on irrigation refer to Chapter 2, Section B. Irrigation.

APPENDIX A.

The following table gives the cost of production by different items, of the total (cultivated) land in the three subdivisions of the taluka. The total amount of land cultivated in the selected families in the 1st, 2nd, and 3rd groups of villages were 2260, 925 and 486 Bighas respectively.

No.	Item of expenditure	Group I	Group II	Group III
		Rs.	Rs.	Rs.
1	Bullock	10,354	4,250	1,594
2	Servant	370	500	16
3	Hired Labour	5,353	2,116	584
4	Seed	727	288	106
5	Manure	7,065	3,014	987
6	Implement, repair	668	811	141
7	Rent	7,272	2,522	1,547
8	Land Revenue	7,057	3,115	700
9	Irrigation	1,786	1,364	—
Total		40,597	17,480	5,625

CHAPTER IV
ECONOMICS OF CULTIVATION
SECTION F.
INCOME FROM THE FIELD

In this section we propose to study the farmer's income from the field. This income depends on a number of factors :—the unit of cultivated area or the amount of land cultivated by a family, the types of crops cultivated, the methods of cultivation and the prices of the products. We shall discuss these points one by one in the following pages.

THE AMOUNT OF LAND CULTIVATED BY A FAMILY

The amount of land cultivated by a family depends primarily upon the amount and quality of land already available for cultivation to the members of the rural population. The cultivated land in the taluka per head of the population is less than even an acre. This is the result of excessive fragmentation and sub-division of holdings caused by increasing pressure of population on land. The average amount of land cultivated by a family varies in different parts of the taluka. This is shown by the following table :—

AMOUNT OF LAND CULTIVATED BY A FAMILY IN THE THREE DIVISIONS OF THE TALUKA

Villages in:-	Average amount of land cultivated by a family ¹	
	in Bighas	in acres
Group 1	15	9
Group 2	11	7
Group 3	8	5

Now since the land in the first group is superior to that in the second group and still more to the land in the third

¹ Vide table I, II and III at the end of this section. The subsequent tables in this section are also based on these tables.

group, the sizes of average amount of land cultivated by a family in the three groups of villages ought to vary inversely to the quality of land. For, in order to maintain a given standard of life the better the quality of land, the less need the amount of land cultivated by a family be. But as we have seen the co-relation between changes in the quality of average land and the size of the average amount of land cultivated by a family in the three divisions of the taluka are direct. This is due to the fact—which we have already noticed—that the first two groups of villages are cultivated mostly by Patidars who have a higher standard of life and larger resources than the Dharalas who mostly cultivate lands in the third group. As between the first and second groups of villages, though the cultivators in both are Patidars, yet the average amount of land cultivated by a family in the second is smaller than in the first, in spite of the fact that the land in the first group is more fertile than in the second. The difference is primarily due to the greater density of population in the second group of villages. One would however expect that the difference in the sizes of the average amount of land cultivated by a family in the two areas should have been wiped out by the migration of cultivators from the second to the first. But due to peculiar social traditions, internal migration within the taluka is less than purely economic considerations suggest. A farmer leaving his own village and settling elsewhere is regarded as having fallen from grace and is called a *Kunbi*, which is considered a term of degradation by a Kulin Patidar. The cultivators in the second group of villages, therefore solve their problem by more intensive cultivation and also by emigration outside the District.¹

Since in agriculture, the family as a whole should be considered as a single supply of labour, we have in our table given the amount of land cultivated by an agriculturist's family in the taluka.

In the following table we give the amount of land cultivated by a cultivator. In other parts of India, these figures

¹ Emigration outside the District is not considered as degrading as migration within the District.

in the table are not strictly comparable with those in our table, yet they furnish a moderately reliable index of relative population pressure on land in the taluka and elsewhere.

No	Name of the Province	Cultivated area per ¹ cultivator— Acres
1	Bombay	12.15
2	N. W. F. Province	11.22
3	The Punjab	9.18
4	C. P. and Berar	8.48
5	Burma	5.65
6	Madras	4.91
7	Bengal	3.12
8	Bihar and Orissa	3.09
9	Assam	2.96
10	U. P.	2.51

KINDS OF CROPS CULTIVATED

The income of the agriculturist varies with the kinds of crops grown by him. Vegetables and commercial crops fetch higher prices than food crops. But all land is not suitable for the production of the former, e.g. the Goradu soil in our taluka is suited to raise sugarcane, tobacco, tal or sesame and vegetables; the sandy soil is good for Bajari, Juwar and Kodra while Rice thrives in Kyari land. There is thus a fair division of the crops grown in the three groups of villages of the taluka according to the three-fold classification of the soil. But this is cut across by the practice of rotation followed by cultivators in all areas in order to maintain the natural fertility of the soil.

The following table gives the distribution of the total amount of land cultivated between various crops by an average cultivating family in each sub-division of the taluka. The percentage figures are given within brackets.

¹ Quoted from Census of India 1921, page 244, in the Punjab Peasant in Prosperity and Debt, by Mr. Darling M. L., page 265.

No.	Group	Group I Bighas	Group II Bighas	Group III Bighas
1	Tobacco	5.2 (35)	3.8 (38)	0.8 (9)
2	Juwari	1.6 (11)	1.3 (11)	1.4 (16)
3	Bajari	2.2 (15)	2.4 (21)	2.6 (30)
4	Kodra Mix	5.0 (33)	2.6 (23)	3.4 (40)
5	Miscellaneous Crops	0.8 (2)	0.6 (5)	0.2 (2)
6	Land Cultivated on share	0.7 (4)	0.6 (6)	— —
7	Fallow land	— —	0.2 (1)	0.2 (3)
		15 (100)	11.5 (100)	8.6 (100)

It can be seen at once that the average cultivator in the first and second group of villages devotes large percentages of the total areas cultivated by them to the production of Tobacco, while he keeps distinctly smaller proportions for growing Juwar and Bajari. Apart from differences made by differences in quality in the same crop grown in the three areas the gross income of the farmers in the first group of villages compared with that in the third group is naturally increased by the larger proportion of land devoted by them to the cultivation of the dearer crops.

METHOD OF CULTIVATION

The general method of cultivation followed by farmers all over the taluka are more or less the same. But the skill with which it is applied varies with the efficiency, energy and resources of different classes of cultivators, e.g. though both the Patidars and Dharalas, the two main agricultural castes in the taluka, follow the traditional agricultural practices of the country, yet the results achieved by them are different.

METHOD OF CULTIVATION OF PATIDARS

The Patidar usually is intelligent and morally and materially strong. Throughout the year, he carries on agricultural operations at the most opportune time, and such opportunities are never lost for want of money and energy. Thus tobacco is planted at the very opportune moment—at

the end of August when the showers of rain are gentle—though the wage rates are very high. Weeding and harvesting operations are also done most punctually. He can purchase efficient implements and rich fertilisers. His cattle are also good. Besides he owns richer land in the village. His lands are also nearer to village sites. The result is that he is able to grow expensive and rich crops like tobacco on his lands.

METHOD OF CULTIVATION OF A DHARALA

Compared to a Patidar, the Dharala is idle, illiterate and inefficient. He is too poor to purchase implements and rich fertilisers. His agricultural operations are also not done at proper times. He cannot afford to pay high wages and is himself too idle to do things at right times. He does not care for more ploughings or for more weedings of his fields. His cattle are weak. His lands are poor in quality and away from village sites. So he is unable to grow rich crops on his land.

The cumulative effect of these differences between the two classes is in part reflected in the following table as also in the table on prices. The cultivators in the first and second groups are Patidars and those in the third are Dharalas.

COMPARATIVE TABLE SHOWING PRODUCE IN MAUNDS (except in Juwar, the produce being in number of Bundles of hay) per BIGHA IN THE THREE GROUPS OF THE TALUKA.

No.	Name of the crop	1st Group	2nd Group	3rd Group
1	Tobacco (in Mds.)	8	8	7
2	Bajari and Math (in Mds.)	11	11	10
3	Kodra Mix. (in Mds.)	23	19	19
4	Juwar (in bundles)	880	350	270

Except in the case of Kodra, the produce of all crops per Bigha is higher in the first and second groups of villages

than in the third, though the sandy soil of the latter suited to the production of Juwar, Bajari and Kodra.

PRICES OF THE PRODUCTS

Prices depend as much on the quality of produce as upon the methods of marketing and facilities for transport. Cultivators in the third group suffer disadvantages in all the above respects and realise lower prices for their crops than those in the first and second groups. Prices realised in the villages of the first and second groups are generally the same as conditions governing the determination of prices are same in them.¹

PRICES²

No.	Product	Price per maund (40 tolas=1 Seer and 40 Seers=One maund)			III group		
		I and II group		III group			
		Rs.	As.	P.	Rs.	As.	P.
1	Tobacco	5	0	0	4	0	0
2	Bajari	1	4	0	1	0	0
3	Kodra	0	12	0	0	10	0
4	Rice	1	0	0	1	0	0
5	Tuer	1	4	0	1	0	0
6	Bavto	0	14	0	0	12	0
7	Juwari (per 100 bundles)	4	0	0	8	8	0
8	Bajari (per 100 bundles)	2	0	0	2	0	0
9	Hay (per one cart load)	3	0	0	2	0	0

The following table is prepared from the data given in the two previous tables. It shows the difference in average gross income derived from different crops grown in the three divisions of the taluka.

¹ For more details refer to chapter 7, "Trade and Transport".

² These are average prices and were received from the cultivators during our winter tour in 1934.

TABLE SHOWING AVERAGE GROSS INCOME PER BIGHA IN RUPEES FROM DIFFERENT CROPS GROWN IN THE THREE DIVISIONS IN 1933-34.

No.	Name of the Crop	Average gross income per Bigha in.—		
		1st group Rs.	2nd group Rs.	3rd group Rs.
1	Tobacco	41/-	41/-	30/-
2	Juwar	15/-	14/-	10/-
3	Bajari—Math	17/-	21/-	17/-
4	Kodra mixture	25/-	20/-	16/-

GROSS AND NET INCOME

The following table shows the gross and net incomes of the average farmer in each group of villages in the taluka. It also states gross and net incomes per Bigha in each group.

No.	Description	1st group	2nd group	3rd group
		Rs.	Rs.	Rs.
1	Amount of land cultivated by an average family in Bighas	15/-	11·5	8·6
2	Gross income per No.(1) in Rs.	486	314·	150·
3	Cost of cultivation per No. (1) in Rs.	267	218·	100
4	Net income per No.(1) in Rs.	169	96·	50
5	Average gross income per Bigha in Rs.	29	27·	18
6	Average cost of production per Bigha in Rs.	18	19·	12
7	Net income per Bigha in Rs.	11	8·	6

FAMILIES WITH LOSS AND PROFIT IN AGRICULTURE

These figures, being averages, however, are not an adequate guide to the actual conditions of the peasants in the taluka. Not all cultivators make profits out of agriculture. Again their income varies widely, as will be seen from the following table.

TABLE SHOWING FAMILIES WITH NET INCOME IN AGRICULTURE IN THE THREE GROUPS

No.	Net income Rs	Number of families in -		
		Group I	Group II	Group III
1	Below 50	20	17	24
2	51 to 100	29	24	17
3	101 to 200	85	16	6
4	201 to 300	27	7	-
5	301 to 400	12	7	1
6	401 to 500	10	-	-
7	Above 500	8	1	-
	Total	141	72	48
Families which suffered loss in agriculture		11	8	8
	Grand Total	152	80	56

A COMPARATIVE PERCENTAGE TABLE SHOWING FAMILIES WITH NET INCOME IN AGRICULTURE IN THE THREE GROUPS

No.	Net income from agriculture	Percentage of families to the total in each group -			Percentage of the total No. of families in all Groups
		Group I	Group II	Group III	
	Rs.	%	%	%	%
1	Below 50	13	21	43	21
2	51 to 100	19	30	30	24
3	101 to 200	23	20	11	20
4	201 to 300	18	9	-	12
5	301 to 400	8	9	2	7
6	401 to 500	7	-	-	3
7	Above 500	5	1	-	3
	Total	98	90	86	90
Families which suffered loss in agriculture		7	10	14	10
		100	100	100	100

PRESENT AGRICULTURAL CRISIS

The world is passing through a severe economic depression. Agriculture which experienced prosperity from 1914 to 1926 is most hard hit at present. The taluka being mainly an agricultural tract is also hard hit. The cultivators have suffered most because the prices of the products they produced had fallen relatively to their expenditures (Vide table A and B). The prices of food crops which occupy 70 per cent. of the total cultivated land in the taluka fell about 40 per cent. and cultivators received very little money in exchange for their products. It is a known fact that cost of production falls more slowly than the prices of the products. The cost of production has gone down by only 25 per cent. (table B). The result of such a change has been that the net income of an agriculturist has gone down by about 15 to 20 per cent. This general result has been corroborated by special investigations carried out with regard to 5 fields in the village of Anklav. The net income of the fields were calculated by examining their gross incomes and cost of cultivation and an index was formed with 1924 as the base year (table D).

The income of the cultivator has been further affected adversely by natural calamities and the non-co-operation movement which continued for four years.

Approaching the effects of depression on the cultivator's standard of life, we find that while the prices of some commodities consumed by him have fallen, others have remained steady. For example the prices of Jaggery, Sugar, Kerosene etc., have fallen about 25 per cent. But salt which is an absolute necessity for the cultivator and his cattle has not gone down in price at all. Interest on loans which forms about 33 per cent. of his total expenditure has also remained the same as it was in 1924. The cultivator now spends some money on education of his children and this expenditure has remained stable. The cost of marriage and other social customs has not been appreciably reduced because of the strict hold of custom on him (table C).

The result of all these factors has been that the cultivator

has been greatly affected and in most cases been unable to maintain his pre-depression standard of life.

TABLE A.
Prices of Agricultural products¹
(Seers of 80 Tolas per rupee)

	Bajari	Tuer	Rice	Kodra	Tobacco	Ghee
1893-02	8·16	7·14	9·12	—	3·9	—
1903-13	9·20	7·13	7·10	—	3·7	—
1914-17	9·12	6·8	6·8	—	3·5	—
1918-22	5·7	3·6	4·6	—	1·3	—
1923-27	7·6	5·0	8·5	9·5	1·5	0·5
1928-33	12·3	6·6	14·5	16·6	1·6	9·7
Percentage of fall in 1928-33 to 1923-27	-39	-24	-42	-43	-7	-29
Percentage of (-) fall or (+) increase in 1928- 33 to 1893-02	-34	+106	-86	—	100	

TABLE B.

	Cost of Production :—			% age of fall in 1933 to 1924
	1924-25	1933-34		
(1) ² Labour Charges	0 7 7	0 5 7		— 25
(2) Manure per cart load	1 8 0	1 0 0		— 33
(3) ³ Rent per acre	20 0 0	16 0 0		— 20
(4) ⁴ Land Revenue per acre	5 8 6	5 8 6		No fall

¹ Figures from 1893-02 to 1918-22 are taken from the Revision Settlement Report of Borsad Taluka 1924, and other figures are calculated from the prices as given in Bombay Gazette published weekly.

² Vide Chapter 5, Section A. Labourers.

³ Do. Section B. Tenants.

⁴ Vide Chapter 10, Land Revenue.

TABLE C.

		Cost of Commodities:—		%age of fall or rise in 1933 to 1924
		1924-25	1933-34	
(1)	Salt per Maund	2 5 4	2 8 0	— 8
(2)	Jaggery	13 11 9	6 2 6	— 56
(3)	Sugar	15 9 9	11 6 10	— 27
(4)	Cloth (rough) per yard	0 5 0	0 3 0	— 40
(5)	Interest	.....	.....	.....
(6)	Social Charges	.....	.....	.....
(7)	Education	.....	.....	.....

TABLE D.

INDEX figures of the net income of 5 fields in the village of Anklav, 1924 net income = 100.

Year	Dhanavaru	Parmavaru	Vaniavaru	Suka	Gokulvaru of Village Asbi
	1	2	3	4	5
1923-24	65	75	122	111	125
1924-25	100	100	100	100	100
1925-26	137	16	81	35	125
1926-27	142	86	11	128	85
1927-28	98	63	72	120	83
1928-29	98	59	68	107	235
1929-30	69	44	74	104	83
1930-31	39	142	97	98	45
1931-32	71	86	64	49	85
1932-33	26	78	41	111	54
1933-34	70	111	89	71	74

THE PROBLEM OF DIMINISHING YIELD AND SOIL EXHAUSTION

TABLE I

Season and Crop Reports of the Bombay Presidency.
Out-turn per cent. of the Normal (Normal=100=12 Ans.)

KAIRA DISTRICT¹

Year	Juwar	Bajani	Rice	Kodra	Tuer	Udad and Mag	Sea- same	Late cotton	Tobacco
1913-14	108	75	125	108	100	67	83	92	117
1914-15	92	67	116	100	88	88	83	75	100
1915-16	39	30	—	4	18	25	23	50	83
1916-17	100	100	94	104	90	67	92	88	108
1917-18	50	25	88	50	88	8	8	58	67
1918-19	16	15	—	6	4	—	56	25	67
1919-20	75	85	75	102	88	58	83	75	75
1920-21	58	44	18	29	11	4	11	25	61
1921-22	57	50	78	68	75	50	50	42	75
1922-23	78	61	78	88	88	67	78	83	75
1923-24	63	57	17	40	28	25	38	48	62
1924-25	75	88	82	92	75	67	83	83	100
1925-26	54	63	29	63	38	42	32	58	57
1926-27	88	71	86	78	88	58	54	78	88
1927-28	88	83	69	88	67	50	25	67	78
1928-29	88	50	73	75	46	57	48	42	53
1929-30	88	88	61	42	38	31	46	63	66
1930-31	—	58	69	56	58	58	54	68	61
1931-32	91	72	88	80	88	72	69	87	88
1932-33	74	61	61	65	72	67	79	78	78

We shall now consider whether the taluka soil is suffering from diminishing returns. For a thorough study of the problem reliable information regarding the past history of the agriculture in the taluka is essential. Unfortunately no such information is available. Except the nomadic and idle Kolis, living along the ravines of the Mahi, all the agricultural castes (specially the Patidars) have been working as industriously as they could over the regions of this taluka.

¹ These figures are taken from the "Season and Crop Reports of the Bombay Presidency" of respective years.

In course of time the Kolis were firmly suppressed and induced to take agriculture by the British Government. There does not seem to have been any change in agricultural practices either. Yet the agricultural return seem to be diminishing. Though we have no figures of the agricultural returns for the taluka of Borsad, we reproduce in Table A the index numbers of produce of different crops of 20 years for the district of Kaira of which the taluka is a part. These seem to indicate a general fall in the output per unit of land of almost all the crops in the area. Except in 1913-14 and in 1916-17 the yield per unit is always below 100 or 12 annas crop.

Apart from falling of frost and destruction of crops by wild beasts and plant diseases, the shortage of manure seems to be the main reason for the diminishing yield of land in the taluka. The frequent floods in the taluka have been a subject of serious complaint by the cultivators as they wash away the soil constituents of their fields. This conclusion is corroborated by the recent experiments carried out both by the Government and the Taluka Development Association for Agriculture. Wherever manures are properly and sufficiently used in the taluka, the returns have always tended to increase. Thus we find that the present diminishing returns are the outcome of soil exhaustion and deficiency of manures.

The principle of diminishing returns operates only when the soil fails to respond to the efforts of man and yields a proportionately decreasing return despite additional dose of labour and capital. Such a time is very distant. Before it is reached, the peasants shall have to adopt the latest standards of intensive and improved cultivation which are applied at present with great success in the agriculture of some of the western civilised countries.

NEED FOR INTENSIVE CULTIVATION

Cultivation in the Taluka is carried on a small scale. There is no scope for extensive cultivation as there is little waste (only 2 per cent. of the total) land in the taluka. But there is a great scope for intensive cultivation.

Irrigation facilities are few, the manures are scarce, the

supply of seed is not pure and the methods of cultivation are primitive and traditional, the breeding of cattle is inefficient, the marketing and transport facilities are imperfect, subsidiary industries are in decadent conditions, fragmentations and sub-divisions are increasing and holdings have become uneconomic, credit facilities are few, the peasant is heavily indebted and last but not the least the peasant is illiterate. With all these handicaps one cannot expect a thriving agriculture and prosperous peasantry in the taluka. Doubtless in many ways within his limits, the taluka cultivator is a capable person but it is equally true that he requires all the assistance that others can give. In the words of the Royal Commission on Agriculture "he is still a man of small resources with small means for meeting his small needs. He requires all the help which science can afford and which organisation, education and training can bring within his reach".

The problem before us is how can a rural population of one and a half lakh of the taluka support itself on 121000 acres of land in decency, independence and comfort. Civilised countries have made great progress by adopting intensive agriculture. France has prospered by intensive cultivation of olive and vine and by the scientific breeding of cattle. In Belgium where the standard of living is high, the peasant is prosperous because market gardening is widely practised; Pigs and Poultry are universally kept and subsidiary industries such as dairy farming, distilling and breeding are well developed. The proverbial prosperity of Denmark is due not only to a first rate Co-operative organisation, but also to a system of farming, which grows the maximum, not of food but of fodder and subordinates everything to the production of animal produce.¹

Like these countries, the taluka should also aim at intensive cultivation and adopt scientific methods in agriculture. It should try to grow two blades of grass where one grows at present. This is not new advice to the peasants. The short-

¹ *The Punjab Peasant in Prosperity and Debt*, by Darling, page 268.

comings of Indian agriculture have been discussed and remedies suggested for a fairly long time.

So far as the taluka is concerned, we divide the problem into two parts. First, deficiencies of the existing form of agriculture should be removed, and secondly, intensive agriculture based on scientific methods should be introduced.

The deficiencies in the existing form of agriculture are as follows :—

First we have seen that the taluka cultivators, specially the Dharalas and Rajputs who till a great portion of the land, do not plough their land properly nor do they care to remove the weeds. This carelessness is in part the result of their poverty and in part their lack of foresight. Secondly, sufficient manures and good seeds are not at present easily available to cultivators. Thirdly, every year wild beasts e.g. monkies, rozes etc., destroy crops in the fields and cause heavy loss to cultivators. Fourthly, the inefficiency of cattle due to their improper breeding affect production in agriculture to a great extent. Fifthly, a cultivator of to-day is more idle and more dependent on his labourer for the performance of agricultural operations than his forefathers in old days. This has increased the cost of production. Sixthly, fragmentation and sub-division of holdings play an important part in reducing the income of the agriculture.

All these deficiencies and defects lower the productivity of agriculture in the taluka and reduce the yield per acre. We have suggested proper remedies for these defects at proper places and we do not like to repeat them again. It will suffice to say that these deficiencies can be easily overcome if only the cultivators were more alert and understand their own interests. They would not require any change in the method of cultivation nor even any appreciable increase in expenditure. If all these deficiencies are removed, there would be a greater yield and a lesser cost of production per acre and the net income would be greater than at present.

As for intensive cultivation, we have to solve the following problems :—

First, crops grown at present are hardly irrigated and depend mostly on rainfall. Secondly, cultivators are only

ments suggested by the Association. Unfortunately the Association lacks sufficient funds to carry on its activities adequately and with vigour. We hope the Government should increase its grant in aid to the Association and public spirited gentlemen should earn the gratitude of cultivators by making handsome donations to it.

ECONOMIC HOLDING

Economists seem to differ in their interpretation of the term 'Economic Holding'. The Broomfield Committee defines it as a holding which ensures man "sufficient work for himself and his bullocks throughout the year".¹ On the other hand, Dr. Mehta thinks that, "an economic holding may mean a holding which yields an income sufficient to maintain a peasant and his family in a state of comfort".² Dr. Mann considers it a holding "which will provide for an average family the minimum standard of life considered satisfactory".³ Mr. Keating also sides with Dr. Mehta and Dr. Mann and says that "it is a holding which allows a man a chance of producing sufficient to support himself and his family in reasonable comfort after paying his necessary expenses".⁴

Thus there are two different points of view from which the true economic holding can be defined. But the two definitions are not coincident. For example, a pair of bullocks can till 25 acres of soft sandy soil, but much less of hard rocky soil. If the former constitutes an economic holding in the sense in which Messrs. Mehta, Mann and Keatings, the latter would be an uneconomic holding. From the practical point of view, there is an advantage, at least in our study in choosing the definition of economic holding an area sufficient to enable a farmer and his family to live in reasonable comfort.

In a previous chapter we have seen that a pair of bullocks could on an average cultivate 25 acres of land in a year's

¹ A Report on the Special Inquiry for the Second Revision Settlement of Bardoli and Chorasi taluka 1928, page 65.

² Rural Economy of Gujarat, by Dr. J. M. Mehta, page 48.

³ Rural Economy in a Deccan Village, Study II, by Dr. Mann, page 43.

⁴ Rural economy in the Bombay Deccan, By Mr. Keatings, page 42.

time.¹ According to the definition of the Bloomfield Committee this should constitute an economic holding.

But out of about 21 thousand holdings² in the taluka only 349 or less than 2 per cent. were 25 acres or above in the year 1921-22. An economic holding defined in this way would be too large for our taluka and would have little relation to the sizes of holdings as already existent in the area. We therefore choose to define economic holding from the point of view of the standard of life of the people in the taluka.

The problem therefore reduces itself to two questions :—
 (A) What is meant by a decent standard of life? (B) What should be the average size of agricultural holdings in the taluka so that farmer and his family can enjoy a decent standard of life. The first question has been dealt with in the chapter on 'Standard of Life'. There we arrive at the conclusion that an average farmer's family requires an income of Rs. 300/- a year to enable it to enjoy a decent standard of life. At present the average peasant in the taluka derives an income of about Rs. 80/- a year from subsidiary occupations. This income can be easily raised to Rs. 100/- a year if the improvements with regard to cattle keeping, off-time occupations etc., that we have suggested elsewhere are effected. He will then have to secure Rs. 200/- a year from his land. We have seen the net income per Bigha of land in the taluka is about Rs. 10/-. Hence the size of the economic holding in our taluka should be about 20 Bighas or $12\frac{1}{2}$ acres per family of agriculturists. In our inquiry we find that the 288 families in the taluka whose circumstances we studied owned 3815 Bighas of land i.e. $13\frac{1}{4}$ Bighas per family. The size of the actual holdings per family of cultivators in the taluka is thus about two-thirds that of the economic holding we have calculated. If the size of holdings per family is increased to 20 Bighas, nearly one-third of the cultivating families who now own land would have to be dispossessed of it. This would not be a solution of the problems of rural life, but would simply aggravate them. The way out of this

¹ Vide Chapter 4, Section A. Live stock.

² Revision Settlement Report of the Borsad Taluka, 1924

dilemma would be to develop subsidiary industries and also to cultivate existing holdings more intensively. As Dr. Mehta says, "The right solution would be to create opportunities for the rural population to supplement their limited income from land".¹

TABLE I

The following table gives the total amount of land cultivated, the areas devoted to different crops, output of crops, their money values in 152 selected families in the 19 villages of the 1st group in the taluka.

No.	Crop	Area Bighas	Produce in Mds	Hay in Bundles	Money values Rs.
1	Tabacco	796 $\frac{1}{2}$	6,571	—	32,855
2	Juwar	289 $\frac{1}{2}$	—	92,000	3,680
3	Bajari Mixture	341	4,811	110,850	6,084
4	Kodra Mixture	745	17,175	725 ²	18,780
5	Miscellaneous crops	48 $\frac{1}{2}$	—	—	1,063
6	Land cultivated on share	82 $\frac{1}{2}$	—	—	1,085
7	Fallow land	12	—	—	—
8	Grass area	—	—	—	2,791 ³
Total		2,260	—	—	66,338

TABLE II

The following table gives the total amount of land cultivated, the area devoted to different crops, output of crops and their money values in 80 selected families in the 13 villages of the second group in the taluka.

¹ Rural Economy of Gujarat, by Dr. J. M. Mehta, page 50.

² In cart loads.

³ This figure represents the income from grass land which is reserved on the border of each field.

No.	Crop.	Area Bighas	Produce in Mds.	Hay in bundles.	Money's Value.
					Rs
1	Tabacco	308 $\frac{1}{4}$	2,522	—	12,610
2	Juwari	106 $\frac{1}{4}$	—	37,000	1,480
3	Bajari Mixture	191	2,178	69,950	3,956
4	Kodra Mixture	209 $\frac{3}{4}$	8,988	188 ¹	4,881
5	Miscellaneous crops	48 $\frac{1}{2}$	—	—	597
6	Land cultivated on share	55	—	—	798
7	Fallow Land	11	—	—	—
8	Grass Area	—	—	—	1,288 ²
	Total	924 $\frac{3}{4}$	—	—	25,110

TABLE III

The following table gives the total amount of land cultivated, the areas devoted to different crops, output of crops and their money value in 56 selected families in 5 villages of the third group in the taluka.

No.	Crop	Area Bighas	Produce in Mds.	Hay in bundles	Money values
					Rs.
1	Tabacco	42 $\frac{1}{2}$	819	—	1,276
2	Juwari	79	—	21,200	773
3	Bajari Mixture	144 $\frac{1}{4}$	1526	45,100	2428
4	Kodra Mixture	193	8710	178 ¹	3093
5	Miscellaneous crops	11 $\frac{1}{2}$	—	—	194
6	Land cultivated on share	2	—	—	42
7	Fallow land	14 $\frac{1}{4}$	—	—	—
8	Grass area	—	—	—	628 ²
	Total	486 $\frac{1}{4}$			8434

¹ In cart loads.² This figure represents income from grass land which is reserved on the border of each field.

CHAPTER V
LABOURERS AND TENANTS
SECTION A.
AGRICULTURAL LABOURERS

AGRICULTURAL LABOURERS IN THE TALUKA

The agricultural population of the taluka were distributed as follows :—¹

No.	Description	in 1895		in 1921 (figures given as percentage of the total population)
		%	%	
1	Land owners	1·97	6·52	
2	Cultivators (land owners)	37·91	38·20	
3	Tenants	29·60	30·28	
4	Agri. Labourers	5·14	6·41	
5	Others	0·08	0·71	
Total Agricultural Population				
	...	74·65	82·12	
Non-agricultural Population				
	...	25·35	17·88	
Grand Total		100·00	100·0	

It will be observed from the above table that only 6 per cent. of the total population in the taluka were purely agricultural labourers. They are almost all Dheds or "Untouchables".² They engage themselves in all types of simple agricultural labour like weeding, cutting and harvesting crops, transplanting the paddy and tobacco etc., except carting and tilling of land. The latter jobs are done by Dharalas as well as by poor Patidars who can associate or

¹ These figures are taken from the "Revision Survey Settlement Reports of Borsad Taluka, 1895 and 1924".

² We have discussed the social condition of Dheds in Ch. 3.

mix freely with the landlords and who are rich enough to own a pair of bullocks, a cart and agricultural implements. As Dheds are neither rich nor "touchables", they cannot engage themselves in these operations. The following table shows the different rates of wages for different agricultural operations during the depression and pre-depression years.

DEPRESSION AND PRE-DEPRESSION WAGE-TABLE:-

No.	Description of Labour	Pre-depres-	Depression	Fall (-) in
		sion wage rate in 1924- 25 per day ¹	wage rate in 1938-34 per day	1938-34 as percentage of 1924-25
		Rs. As. P.	Rs. As. P.	%
1	Cleansing the field and preparing fences etc.,	0 5 0	0 4 0	-20
2	Digging the field	0 8 0	0 7 0	-13
3	Manuring the field	0 6 0	0 5 0	-17
4	Digging out the cotton or Tuer stalks from the field	0 8 0	0 7 0	-13
5	Weeding the fields	0 6 0	0 5 0	-17
6	Planting Bavto	0 8 0	0 6 0	-25
7	Planting Paddy	0 8 0	0 6 0	-25
8	Transplanting tobacco	1 0 0	0 12 0	-25
9	Watering tobacco seedlings	0 8 0	0 6 0	-25
10	Cutting Bajari, Juwar, Kodra, Math, Guvar, etc.,	0 8 0	0 6 0	-25
11	Collecting the harvested crop in the yard	0 8 0	0 5 0	-38
12	Removing the extra leaves of tobacco plants in the field	0 8 0	0 5 0	-38
13	Irrigating the land	0 8 0	0 6 0	-25
14	Picking cotton from its plants (Morning hours) only	0 4 0	0 3 0	-25
15	Cutting tobacco leaves	0 4 0	0 3 0	-25
16	Cutting tuer (Morning hours)	0 4 0	0 3 0	-25

¹ 1924-25 seems to have been a normal pre-depression year in respect of rainfall and other matters affecting agriculture. We have also taken it to be the base year in other connections.

No.	Description of Labour	Pre-depression	Depression	Fall (-)
		wage rate in 1924-25 per day	wage rate in 1933-34 per day	as % age of 1924-25
17	Bundling the leaves of tobacco	1 0 0	0 10 0	-38
18	Hanging the tobacco leaves on Bamboos, (Morning hours)	0 4 0	0 3 0	-25
19	Preparing tobacco for chewing and smoking etc.,	0 8 0	0 5 0	-38
	Average	0 7 7	0 5 7	-25
1	Ploughing the land	4 0 0	3 0 0	-25
2	Hoeing the land with small karabadi	2 0 0	1 8 0	-25
3	Sowing the seeds with Drill and tarfen	3 0 0	2 0 0	-33
4	Carting the Manure from manure pit to the field	4 0 0	3 0 0	-25
5	Carting for marketing (for 5 miles only)	3 0 0	2 0 0	-33
	Average	3 3 2	2 4 9	-28

Wage rates for non-agricultural workers are as follows : -

No.	Description of Labour	Pre-depression	Depression	Fall (-) in
		wage rate in 1924-25 per day	wage rate in 1933-34 per day	1933-34 as percentage of 1924-25
1	Preparing clay for building Houses	0 8 0	0 4 0	-50
2	Arranging tiles on the roof of the house	0 10 0	0 6 0	-40
3	Weaving the cloth	1 0 0	0 10 0	-38
4	Brick making	0 10 0	0 6 0	-40
5	Miscellaneous work	0 12 0	0 8 0	-34
	Average	0 11 2	0 6 9	

(Wage rates in kind)

1	Threshing Kodra and Paddy crops of two Bighas		One maund corn, 1 maund corn
2	Threshing Bajari Bavto, Juwar, Tuer, Math and Gowari crops of Two Bighas	15 seers	15 seers

EXPLANATION OF THE WAGE TABLE

These are the daily wage rates for a male adult. Generally it happens that if a labourer works for the whole day, he is supplied the noon-dinner in the field by the employer. He comes to the field at about 8 in the morning and leaves the field at sun-set, working for about 10 hours. If the work in the field is short or if the nature of the work requires that it should be done in the morning in a dewy atmosphere as the cutting of tobacco leaves or of tuer or plucking cotton balls, he is engaged part time and is given half the above rates without food. If the employer does not supply the mid-day meal, even if he works for the whole day, he is required to bring his own food, in which case an extra anna is given to him. In the above table we have given the rates of wages obtained by a male adult per day when he is supplied the mid-day meal by his employer.

Certain types of work are by custom paid for in kind instead of in cash. If the work is a piece-work which must be finished at a stretch and cannot be left half done except at the risk of damage (like threshing Kodra, Tuer, Mag, Math, Bajari, Rice etc.), the labourer usually receives payment in kind when the work is finished. Usually threshing of corn is begun at night and finished by the morning.

Sometimes a cultivator engages a labourer for the whole year for his field work. In this case the labourer is always a Dharala and he pays him according to work he intends to take from him. If he cultivates more Bighas of land, he is paid more. Generally he is paid from Rs. 75 to Rs. 100 exclusive of clothing and shelter. The food is provided by the master.

The wages of a female labourer are commonly one anna less than those of the male adult. Children above 14 and below 18 receive also one anna less than the male adult. They are generally employed in weeding the fields, removing the extra leaves of tobacco plants, harvesting the crops etc., but not in threshing corn or bundling the tobacco leaves or digging the fields where hard labour and a little amount of skill is required.

HOW WAGES ARE DETERMINED?

Wages are generally determined by the supply and demand of labour. A certain amount of hired labour is indispensable to even the most self-reliant peasant. Hence it has been observed that during the working season, the demand is always greater than the supply. The supply of labour is scarce also due to their migration to neighbouring industrial centres, such as Baroda, Petlad and Ahmedabad, where they get decent wages and permanent employment. The spread of education and the high-handedness of the so-called high caste people have given impetus to this exodus of Dheds to cities. The demand for agricultural labour is at times extremely inelastic since the work must be performed during the period determined by the condition of the season and cannot be delayed except at a risk of serious damage. Now labour being scarce and demand being urgent in the busy season, wages often go up high. For example, during the active monsoon when the rains are continuous, weeds grow up very quickly sucking the vitality of land and checking the growth of crops. They cannot be removed unless the rains stop and the sun shines. When such an opportunity presents itself, there is a keen competition among the cultivators for the services of labourers. On such occasions 10 to 15 hands are employed on a field of two or three Bighas to perform the work as quickly as possible. Hence the wage rate for weeding has a tendency to go up. Again when the season for tobacco transplantation is at hand, people await a slow downpour of rain with intermittent mild rays of sunshine. As soon as such an opportunity offers itself, the people hasten to transplant their tobacco plants. The demand for labour goes up and the

wages are swollen. The wages of labour for tobacco transplantation are higher than those for weeding the fields (in spite of equal urgent demand of labour in both) because weeding may be postponed, though at the risk of some damage to the crops, but an opportunity lost in tobacco transplantation never returns and the whole investment is wasted if the work is not done at the right moment.

Apart from seasonal variations in wages, we may deduce two general principles which determine relative wages. First, wages vary according to the value of the crops. In other words, the richer the crop, the greater the amount of wages for work done in connection with it. Secondly, the more laborious the work, the greater the wages.

Cultivators do not grumble or hesitate to pay higher wages if they expect higher prices for their commodities. Wage rates for work in connection with tobacco are always higher than for those of food crops, specially Kodra, Bajari, Bavto and Paddy. Similarly, fall in the wages of working for tobacco crops is also influenced by the variations in the relative prices of different crops. During pre-depression days when its price was high and ranged between Rs. 12 and Rs. 16 a maund, workers engaged in different operations on tobacco were paid highly. Now that its price has fallen considerably, the wages of labourers have diminished by about 30 per cent. On the other hand remuneration for heavy work in the field, e.g. digging has not fallen so much.

INCOME OF A LABOURER

A Dhed family consists of six members, the labourer, his wife, three children and one old person in the house. But of these only three are actual wage earners. The income of the family varies with the period of employment. We made a number of efforts to study the income and expenditure of Dhed families during a year, but these were not successful. The Dhed labourers are illiterate and remained quite indifferent to our inquiry, and replied that they have no real income and whatever they earn is spent on food. They do not keep accounts. Their income is unstable. They

generally receive wages in cash. When they work in fields sometimes they get food at noon from their employers.

From the little information which we could gather we can say that the approximate income of a Dhed family in a year was as follows :—

A. AGRICULTURAL INCOME

Period of employment in days		Wage rate per day	
		Rs. As. P.	Rs. As. P.
(1) Male adult	80	0 6 0	30 0 0
(2) Female	60	0 4 0	15 0 0
(3) Child	60	0 4 0	15 0 0
			60 0 0

B. NON-AGRICULTURAL INCOME

(1) Male adult	45	0 7 0	19 11 0
(2) Female	45	0 6 0	16 14 0
(3) Child	—	—	—
Add agricultural income			36 9 0
Total income	Rs.	60 0 0	
			96 9 0

Thus the total income of an average Dhed family was about 'Rs. 95/- a year. His expenses were roughly as follows :—

(1) Food	Rs. 45/-
(2) Clothes	,, 15/-
(3) Miscellaneous	,, 10/-
(4) Interest on debt	,, 25/-
Total	Rs. 95/-

The Dhed family spends only Rs. 45/- on food because the Dhed labourer receives his mid-day meals from his employer on many days during his employment on the field.

His food is Kodari and Kodra loaf with curd and chillies. He is too poor to afford ghee, but sometimes uses oil. Some of them have developed drinking habits which means that they can spend less on food. His clothings are very few, a short dhoti and a falia with a shirt in winter. They use earthen utensils. The family is indebted to an extent of Rs. 100/- and pays interest on an average Rs. 25/- a year. With such a poor standard of life one can hardly expect any efficiency from them. It is complained that they do not turn out sufficient work in return for the high wages they receive.

SUGGESTIONS

We suggest that the problem of labour should be regulated by a committee of local leaders who exercise considerable influence on the people. At present, there is no relation between the wages of the labourers and the prices of their products or their standard of living. The committee should fix the rates of wages from time to time in relation to the above facts. Such standardised wage rates will benefit both the employer and the employee. It is needless to say that a well paid, contented and healthy labourer is more than proportionately efficient and hardworking than a discontented underfed one. Secondly, the committee should encourage Dhed families to raise their standard of living. Let them live in muddy houses, but the houses should be properly ventilated. The streets and surroundings must be clean and healthy. There must be ample water supply and public institutions must be open to them. These changes do not require any expenditure, but consciousness on the part of the people. Thirdly, the committee should see that they (labourers) are not harassed and exploited by the so-called higher classes people.

CHAPTER V

LABOURERS AND TENANTS

SECTION B.

TENANTS

About 30 per cent. of the population are tenants in the taluka. As most of the lands are owned by the Patidars except in the Kantha Villages i.e. villages situated on the bank of the river, the Dharalas cultivate the land on tenancy system.

Of course Dharalas own a few Bighas of their own, but these being insufficient to maintain their families, they have to hire more land. In the Kantha villages almost all their lands are mortgaged to village Banias and an average Dharala has been reduced to the position of a mere tenant.

There are also some Patidars who till the lands of others. But such tenant Patidars' number is small as compared with tenant Dharalas. Some of them rent their own inferior land and cultivate better land taken on rent from others.

SYSTEM OF TENANCY

Generally lands are taken on year to year lease either on payment of a fixed rent in cash or in payment of a fixed share of the produce of the land.

(i) RENTAL SYSTEM

In the rental system the peasant pays a fixed sum as rent per Bigha to the landlord. The land remains in the possession of the tenant for one year. The tenant may grow any crop he likes on the field, but he cannot damage the trees on the borders and must not take their fruits unless he is given the right by the contract. The land revenue is paid by the landlord.

Generally the rent is fixed according to the quality of the land, its nearness to the village market, or its facilities for irrigation and character of the class to which the tenant belongs. In the 1st and 2nd group of the villages where land

is rich, population dense and peasants are skilful, rent is high. If the land belongs to a charitable institution or to a Masjid or Temple, the rent is usually low as the land is not kept in good condition. Sometimes a rich business man entrusts his lands to an honest agriculturist friend on a low rent, when he lives in the city. Again when a particular cultivator manages the affairs of a minor or a widow, he pays low rent. Sometimes rent is higher when the fruits of the trees like Mango or Rayen are allowed to be enjoyed by the tenant. Similarly if the landlord properly manures and introduces improvements into his land he charges higher rents to his tenants. It was observed that tenants paid high rents for particular plots if these adjoined their own lands or were in the vicinity of their houses or had some special advantages from their point of view. If the tenant is already a debtor to the landlord, the latter charges him higher rents than he would charge others. This fact was observed by the Broomefield Committee during the Bardoli inquiry. The Rani Paraj tenants who are similar to our Dharalas and are indebted to the landlords were as a class charged higher rents than other tenants. As the Committee says "rent really represents, interest, either the interest on money borrowed or in arrears, or the interest on a sum which the tenant, previously the owner of the land, has received under the conditional sale and hopes in time to repay. There may be little or no relation between the rent paid in such cases and the true rental value of the land. The showkars method appears to be (a) to get the tenant into his debt, (b) to arrange that the debt exceeds anything that the tenant can pay and then (c) to compel him to cultivate the landlord's land for nothing, by seizing his crop every year in satisfaction of alleged dues, of which the tenant has no accurate account. In such circumstances it is unsafe to regard rent as something separate from the rest of the account. It is probably seldom paid separately and is really only a sort of labour".¹ This quotation explains the equality of rent in the second and third groups of villages in our taluka in spite of the fact that

¹ Report of the Special Inquiry into the Second Revision Settlement of the Bardoli and Chorasi Talukas, 1929, page 17, 18.

the land in the third group is decidedly inferior in fertility and other advantages to the land in the second group.

VALUE OF RENTAL STATISTICS

The Revision Revenue Settlement Commissioners attach much importance to rental statistics and base their conclusions on them. In its resolution R. D. 1790/24 dated 13-5-27 the Government of Bombay accepted the position that "rental value, where it can be ascertained, must be adopted as the sole basis for fixing the assessment".¹ The rental value according to them, indicates the net profit of agriculture; and it is generally assumed that the maximum assessment ought to be half the rental value of the plot of land in a village. But prior to any trust is put on rental statistics, it is essential to know whether they are compiled in a manner which ensures accuracy. Unfortunately the rental data registered in tenancy books are "probably the least reliable of the village records. Mistakes such as showing a rent against one survey number when several are included in the lease, showing land as leased for a large or a shorter term than was really the case, showing the tenant as paying the assessment when he deducts it from the rent or even when the landlord himself pays it, showing a wrong figure of rent, etc., are quite common and may obviously make a considerable difference to the results obtained. The tenancy registers do not contain all the material facts. Interest leases are generally entered without any indication of their real character. Expenditure by the landlord is never mentioned even when it is a condition of the lease. Information as to usufruct of trees is usually incomplete or missing altogether".² Under such conditions we cannot place much reliance upon the data collected by us. For, these were supplied to us mainly out of tenancy registers. Moreover, we could not make detailed investigations to find out the extent of errors in these statistics. However, these statistics are a

¹ Quoted from the Report of the Special Inquiry into the Second Revision Settlement of the Bardoli and Chorasi Talukas, 1929, page 39.

² The Report of the Special Inquiry into the Second Revision Settlement of the Bardoli and Chorasi Taluka, 1929, page 22.

rough guide which indicates the rent situation in the taluka approximately.

RENTAL SITUATION IN THE SUB-DIVISIONS OF THE TALUKA

As cultivators are both proprietors and tenants they give and take lands on rent. There are some who give on rent their own inferior lands to others and cultivate the better land taken on rent. The situation is shown in the following table.

TABLE I

The table showing distribution of the use of landed property owned by cultivators in the three groups of villages of the taluka. Percentage figures are given in brackets.

Description	Group I Bighas	Group II Bighas	Group III Bighas
(1) Land given on rent	663 (26)	217 (24)	...
(2) Land given on share	191 (8)	62 (7)	25 (7)
(3) Residue, land cultivated by the owners themselves	1644 (66)	625 (69)	325 (93)
Total land owned	2498 (100)	904 (100)	850 (100)

TABLE II

The table showing the distribution of ownership, land cultivated by cultivators in all groups. Percentage figures are given in brackets.

Description	Group I Bighas	Group II Bighas	Group III Bighas
(1) Owned cultivated land	1644 (73)	625 (68)	325 (67)
(2) Land cultivated on share	82 (3)	55 (6)	2 —
(3) Land cultivated on rent	534 (24)	245 (26)	159 (33)
Total cultivated land	2260 (100)	925 (100)	486 (100)

It will be observed from the above tables that the cultivators in the first and second group (who are mostly Patidars)

give and take lands on rent to the extent of 25 per cent. of their total owned or total cultivated lands. The cultivators in the third group have no land to give on rent but take land on rent to the extent of 33 per cent. of the total area cultivated by them. This is due to the fact that they are poorer than the cultivators in the first and second group and possess less land and that too of an inferior quality. Moreover, in many cases they are simply taking on rent the land which once belonged to them but which have been snatched away from them by their Bania creditors. Secondly, it seems from the figures that cultivators in the first group have more lands than they require to cultivate themselves, whereas those in the second group are slightly in need of more lands than at present what they possess for cultivation. A family in the 1st, 2nd and 3rd group of villages owns on an average 17, 10 and 6 Bighas and cultivates an average 15, 10 and 8 Bighas of land.

RENT PER BIGHA IN DIFFERENT GROUPS OF THE TALUKA

It has already been observed that the rent per unit of land differs in different parts of the taluka largely due to the difference in quality of the soil and the economic position of cultivators. The Patidars who generally take fertile and better land on rent for cultivation, pay higher rents than the Dharalas who hire generally inferior lands. Thus whereas the Patidar Cultivators in the I and II group pay Rs. 13/- and Rs. 10/- respectively per Bigha as rent, they receive only Rs. 8/- and Rs. 7/- respectively per Bigha as rent from their tenants who are mostly Dharalas. The cultivators of the III group have no surplus land to give on rent. On the contrary they themselves take land on rent and for these lands they pay on an average Rs. 10/- per Bigha. Though most probably these lands are not at least superior to the lands rented out by landlords in the first and second sub-divisions. The explanation of this phenomena lies in the fact that the land owners in the III group villages are generally showkars and their tenants are their debtors whom they charge more than economic rents. Probably also as the

Broomfield Committee observes "Sometimes too high rent is the sign of a bad tenant"¹ and the Dharalas certainly are not the good tenants.

The following table shows rent per Bigha in all the subdivisions of the taluka for land given on rent and land taken on rent.

Groups	Land given on rent			Land taken on rent		
	Bighas	Rent Rs.	Rent per Bigha	Bighas	Rent Rs.	Rent per Bigha
I	663	5,175	8	534	7,272	14
II	217	1,550	7	245	2,522	10
III	...	...	...	159	1,547	10
Total	880	6,725	7	938	11,341	12

The total land under rental system in the above table is 1818 Bighas the rent for which amounts to Rs. 18,066 or about Rs. 10/- per Bigha.

CRITICISM

The land under any form of tenancy can improve only if it is owned by an agriculturist landlord. The cultivator landlords fortunately are found in each villages and it may be said that the present progress in agriculture is mainly due to them. It is they who have invested their money in installing the 145 pumps in the taluka and in digging new wells. The experiments that are carried out at present to some extent by the Taluka Development Agricultural Association are also tried in their fields and with their capital and enterprise. The benefit of such a class of landlords is that while the tenants grow crops in their fields the landlords can spend their energies and money on agricultural improvements. Here there is a harmonious relation between the tenant and the landlord, as the one knows the difficulties of the other. This class of landlords also supplies local leaders in the villages,

¹ Report of the Special Inquiry into the Second Revision Settlement of the Bardoli and Chorasi Talukas, 1929, page 22.

who have ample time to take interest in the uplift of the rural cultivators.

But unfortunately all landlords are not of this description. There are some landlords who may be called 'absentee landlords' and who do not take much interest in their lands. Some of them own land for ostentation or social prestige, but a large part of them are 'Showkars' who have snatched away land from the poor cultivators. Though the showkar landlord lives in the village, he is not directly interested in the improvements of his land. At least he feels that the land really does not belong to him, and so long as rent is regularly paid, he would not bother much about it. No capital is invested by him, for its improvement. His energies, time and money are directed to the development of his business as a money-lender and middle-man—banking, money-lending, shop keeping, etc. Mr. Carver rightly observes, "Next to war, pestilence and famine the worst thing that can happen to a rural community is absentee landlordism".¹ As the Showkar does not take interest in land, the tenant gets no impetus to improve it. On the contrary, he extracts as much as he can from it during the years of his tenancy. This tenancy is precarious, there is no act which safeguards his interest as tenant and he can be driven out any time by the landlord. The result of such a system is obvious. Land has deteriorated in quality and its yield per Bigha has decreased. Secondly, the showkar landlord rack-rents his tenant who is unable to pay his rents which mount up into debts owned to the showkar landlord. Thirdly, the showkar landlord has spoiled good relations between landlord and tenant. There are some other land properties in the taluka which suffer from neglect and are not properly developed. Land belonging to temples, panjarapoles, schools and other Charitable Institutions receive very little care from their trustees and though here the rents are low, the lands deteriorate. Lands belonging to helpless widows are similarly neglected. Again about 2000 acres of land was confiscated by the Government and sold to outside persons in the Taluka

¹ Principles of Rural Economics by T. N. Carver, page 377.

during the last Swaraj Movement. The lands had to be leased to inefficient cultivators because of the prevalent sentiment that no self-respecting cultivator would till them. Their new masters however, fear that their lands would be taken back from them soon or late and they have therefore no incentive to improve them. They do not restore the fertility of the soil by the use of manures. They even cut away trees and hedges on the borders of the fields.

SHARE SYSTEM

Another method of tenancy is the share system in which the harvested produce of the field is divided between the two parties. If the tenant receives manure from the landlord he gives half of all the products of the field including the boundary grass, the fodder and the wood. But if no manure is supplied he shares only the crop and nothing else.

The landlord resorts to such a system if the tenant habitually fails to pay rent or is found incapable of paying rent or when he thinks that more produce would be received in share than in rent.

An industrious and honest tenant generally prefers taking land on rent rather than on the Share System. But as rents have not fallen enough and the natural calamities ruin the crop year after year and the price of produce have fallen very much, he is induced to prefer the share system. The landlord also thinks it wise to hire out some on share system. So there is a growing tendency among the people to prefer the share system. Yet this arrangement has not superseded the rental system.

According to our enquiry the land under metayage is only 7 per cent. of the total cultivated land. The system has its disadvantages, and according to Dr. Mehta "the share system of Gujarat is not beneficial to the society. The tenants having very little capital and holding the land on short lease, do not cultivate the land with efficiency. The tenants try to conceal a part of the produce and their relation with the landlord are anything but harmonious and on the whole the total output would have been much greater if the land were cultivated by the owner under the system of tenancy of

such crop sharing system".¹ But so long as we have a large number of cultivators who have not enough resources to total land on money rent, the abolition of the share system would add to the number of landless agricultural labourers and the efficiency of production would not increase. The only solution of the problem is that the landlords should themselves take keen interest in their lands and supply capital, cattle and implements to the tenants.

Rural Economy of Gujarat, by Dr. J. M. Mehta, page 42.

CHAPTER VI

RURAL INDUSTRIES

SCOPE OF THE CHAPTER

In this chapter, we propose to discuss the problems of rural industries which fit in with the main occupation of the peasant. Rural industries have to occupy a subsidiary position in the economics of our villages, and therefore, their selection ought to be such, that they would not interfere with the main duties of an agriculturist at any time of the year.

POSITION OF RURAL INDUSTRIES IN THE TALUKA SOME 50 YEARS BACK

The position of rural industries in the villages of the taluka, only half a century back was quite different to that at present. In those days, villages were more or less self-sufficient. The wants of cultivators were few and were supplied by cultivators themselves in their spare times and by village artisans. Thus the cultivator's clothes were hand spun by the members of his family and hand woven by the weavers in the village. There were 1,463 hand looms in the 72 Government villages of the taluka in 1895.¹ Thus for every 85 persons or about 14 families, there was one hand loom which easily supplied the needs of the population. Needless to say that when so many hand looms were working, thousands of spinning wheels must have been humming in the houses of cultivators to supply the necessary yarn; for foreign yarn was rarely used by the village weavers in those days. Again, there were 159 oil presses in the 72 Government villages in 1895.² The people extracted oil from oil seeds, getting them pressed by the Ganchi in their oil presses. The rice and corn were hulled and the grains ground at home by the women folk. Milk was never sold but was churned and turned into ghee. The

¹ Revision Settlement Survey Report of Borsad Taluka, 1895, page 17.

² Ibid, page 17.

cultivator made his own ropes from indigenous fibre known as *Bhindi*. The implements were made and repaired by the village smith and carpenter. The potter supplied the earthen utensils. The chamar supplied the necessary leather for foot-wear and for *Kos* or leather bag for drawing water from the well.

People, however, were fond of ornaments and gold and silver were imported into the taluka. Some rich cultivators imported brass and other metal vessels. Iron was also imported for making agricultural implements and household utensils. In brief, apart from metals, very few things were imported into the taluka, judged by modern standards, the standard of living of the peasants was low as their wants were few, but probably they were less unhappy. Their spare time was fully utilised in rural industries and their family income was enough to maintain their families except during famines.

RURAL INDUSTRIES IN TRANSITION

The introduction of machine gave a serious blow to the cottage industries. The industrial Revolution in England destroyed her rural industries and threw thousands of agriculturists out of employment. This led to serious agrarian revolutions in the country during the first half of the 19th century. Naturally, the peasant with small means of cultivation failed to support his family in the absence of supplementary income from cottage industries. He deserted his village, turned to cities, lost his independence and became a slave of the capitalist and the machine.

A similar calamity befell the agriculturists of this taluka in the last quarter of the 19th century. "Of course, long after the death of Aurangzeb, due to absence of any strong central Government, the organised industries in Indian villages had begun to decline, but the policy of the British Government expedited to a certain extent the process of extinction".¹ Introduction of improved means of transportation and better roads encouraged import of machinery as

¹ Indian Industry and Its Problems, by Mr. H. R. Soni, M.A., M.Sc. Vol. I, page 5.

well as of cheap finished products. The process was slow till the end of 19th century. It is in the 20th century that the extinction of rural crafts was rapid. "Unlike his new rival, the Indian craftsman could not improve the quality of his products or bring down the cost of production below a certain level without starving himself. So he was utterly powerless when machine-made goods invaded India. He lost the foreign market; and finally when the newly constructed railways brought the enemy to his door, even the local market. He was in no way equipped for that unequal struggle; so that as had happened in the birth place of the Industrial Revolution, the decline and in some cases even the disappearance of his craft could not be averted by any means".¹ The taluka peasant could neither face the competition of machines in the field of production nor as a consumer resist the temptation to buy cheap and fashionable machine-made articles in preference to indigenous products of handicrafts.

Thus mill cloth was preferred to *Khaddar* or hand spun and hand woven cloth and the great spinning and weaving industries of the villages were disorganised if not completely extinguished. The spinning wheel which hummed in almost every home of the cultivator 40 years back has now met the same destiny as did in England the spinning wheel of the time of Queen Anne. Hundreds of weavers and thousands of spinners lost their bread through introduction of machine-made yarns from Lancashire and Bombay cotton mills. The following figures indicate the decline of the hand loom industry in the 72 Government villages of the taluka during the last 40 years.²

¹ Indian Industry and Its Problems, by H. R. Soni, page 7.

² The figures for 1895 are taken from Revision Settlement Report of the Borsad Taluka, 1895 while those of 1930 and 1935 were collected by the Taluka Development Association for Agriculture, Borsad which kindly supplied them to us.

No.	Year	No. of hand looms	Percentage to 1895
1	1895	1,463	...
2	1930	616	42
3	1935	402	27

Thus the number of hand looms had fallen by 58 per cent in 1930 and 73 per cent. in 1935 since 1895. The villages most affected are Alarsa, Borsad, Dabhasi, Amod, Bhavanipura, Bochasan, Isnav, Khadana, Palaj, Pandoli, Porda, Sunav, Badalpur, Dehvan and Ralaj where even in 1930 more than 20 hand looms were working.¹ Similarly hundreds of women specially widows, who maintained themselves by hulling and grinding corn are being thrown out of work by the introduction of hulling and grinding machines. The grinding and hulling machines are usually attached to the water pump. Almost all the paddy consumed in the taluka is hulled by these machines at a charge of one anna per maund of paddy. Villagers who have no such facility in their villages go to neighbouring villages to get their rice hulled. Grinding of corn has not become so common, but the richer classes get their flour prepared by the machines. Machine-made flour is used at social feasts which are performed even during these days in large numbers every year in the villages of the taluka. The number of oil presses also have declined by 19 per cent. since 1895² though the consumption of oil has increased. A large quantity of oil is imported every year into the taluka. Pottery and leather industries also have suffered much from the import of finished machine-made articles. All this means that the cultivators who were once also part time craftsmen are now becoming mere producers of raw materials.

The industries which are still carried on to some extent by the agriculturist in the taluka during spare time are as follows :—

¹ A list of villages with handlooms and oil-presses has been given in Appendix A, at the end of this chapter.

² Vide Appendix A, at the end of this chapter.

No. Name of the Industry.

1. Ginning.
2. Spinning.
3. Embroidery.
4. Carting.
5. Tailoring.
6. Shopping.
7. Button making.
8. Money lending.
9. Hulling of corn
10. Dal splitting.
11. Flour making.
12. Cattle breeding (Ghee making, etc)
13. Pickle making.
14. Earthen and wooden toy making.
15. Basket making.
16. Rope making.
17. Soap making.
18. Kite making.
19. Bidi making.
20. Tobacco for chewing and smoking.
21. Hair Oil making.
22. Service.

The industries which are carried on by non-agriculturist classes and which play an important part in the rural economy of the villages, are as follows :—

No. Name of the Industry.

1. Iron foundry.
2. Iron agricultural implements making.
3. Wooden agricultural implements making.
4. Cart making.
5. Carpentry.
6. House building.
7. Wooden and stone engraving.
8. Tanning.
9. Shoe making.
10. Leather articles making.
11. Tile making.

- 12. Brick making.
- 13. Earthen vessels and granary making.
- 14. Wire drawing.
- 15. Gold, silver and other metal ornaments making.
- 16. Metal utensils making.
- 17. Art brassware.
- 18. Scissors making.
- 19. Kite making.
- 20. Wooden and horn comb making.
- 21. Tabla and other musical instruments making.
- 22. Brush making.
- 23. Glass bead curtains making.
- 24. Book binding.
- 25. Picture framing.
- 26. Printing.
- 27. Calico printing.
- 28. Cotton dyeing.
- 29. Carpet making.
- 30. Woollen blanket making.
- 31. Oil pressing.

INCOME FROM SUBSIDIARY SOURCES

According to our inquiry the cultivators in the three different groups of villages in the taluka derived the following incomes from subsidiary sources.

No.	Income from	Ist group	IIInd group	IIIrd group
		Rs. per average family	Rs. per average family	Rs. per average family
1	Cattle breeding	74	78	59
2	Service	10	16	2
3	Odd jobs	6	6	13
4	Interest	5	4	0·4
		95	104	74·4

The following table gives the incomes from the subsidiary sources in percentages of the total in the three groups.

No	Subsidiary occupation	Ist group	IIInd group	IIIrd group
		%	%	%
1	Cattle breeding	76	73	80
2	Service	11	17	3
3	Odd jobs	6	6	17
4	Interest	5	4	
		100	100	100

CATTLE BREEDING

It will be observed from the above figures that the cultivators in all the groups derive more than 70 per cent. of their present subsidiary income from cattle. Many families live upon cattle breeding. This occupation has enabled them to carry on agriculture despite its unremunerative character. After the extinction of main cottage industries, it has been the only paying industry for the cultivators. It gives employment to women who otherwise remain idle at home. Peasants having little land and helpless widows buy buffaloes on *Khandha* loans repaying them by monthly instalments from the proceeds of the sale of milk and ghee. They maintain themselves on the surplus of income over payments. Under existing conditions the practice of keeping cattle has been a great boon to the agriculturists of the taluka.

SERVICE

Next in importance is income from services which is highest in the second and lowest in the third group of villages. This lends support to the general opinion that cultivators in the second group (Patidars) migrate more readily than those from other groups. The Dharalas in the third group do not migrate in spite of the fact that they starve at home. This is due to the prevailing illiteracy and conservatism among them.

ODD JOBS

Income from odd jobs like bidi making, rope making, chewing and smoking tobacco making, carting etc., is

- 12. Brick making.
- 13. Earthen vessels and granary making.
- 14. Wire drawing.
- 15. Gold, silver and other metal ornaments making.
- 16. Metal utensils making.
- 17. Art brassware.
- 18. Scissors making.
- 19. Kite making.
- 20. Wooden and horn comb making.
- 21. Tabla and other musical instruments making.
- 22. Brush making.
- 23. Glass bead curtains making.
- 24. Book binding.
- 25. Picture framing.
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- 30. Woollen blanket making.
- 31. Oil pressing.

INCOME FROM SUBSIDIARY SOURCES

According to our inquiry the cultivators in the three different groups of villages in the taluka derived the following incomes from subsidiary sources.

No.	Income from	1st group	2nd group	3rd group
		Rs. per average family	Rs. per average family	Rs. per average family
1	Cattle breeding	74	78	59
2	Service	10	16	2
3	Odd jobs	6	6	13
4	Interest	5	4	0·4
		95	104	74·4

The following table gives the incomes from the subsidiary sources in percentages of the total in the three groups.

No.	Subsidiary occupation	Ist group	IIInd group	IIIrd group
		%	%	%
1	Cattle breeding	76	73	80
2	Service	11	17	8
3	Odd jobs	6	6	17
4	Interest	5	4	
		100	100	100

CATTLE BREEDING

It will be observed from the above figures that the cultivators in all the groups derive more than 70 per cent. of their present subsidiary income from cattle. Many families live upon cattle breeding. This occupation has enabled them to carry on agriculture despite its unremunerative character. After the extinction of main cottage industries, it has been the only paying industry for the cultivators. It gives employment to women who otherwise remain idle at home. Peasants having little land and helpless widows buy buffaloes on *Khandha* loans repaying them by monthly instalments from the proceeds of the sale of milk and ghee. They maintain themselves on the surplus of income over payments. Under existing conditions the practice of keeping cattle has been a great boon to the agriculturists of the taluka.

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Next in importance is income from services which is highest in the second and lowest in the third group of villages. This lends support to the general opinion that cultivators in the second group (Patidars) migrate more readily than those from other groups. The Dharalas in the third group do not migrate in spite of the fact that they starve at home. This is due to the prevailing illiteracy and conservatism among them.

ODD JOBS

Income from odd jobs like bidi making, rope making, chewing and smoking tobacco making, carting etc., is

highest in the third group as these occupations are more or less laborious and attract only the poorer classes of cultivators like the Dharalas. A few of the Patidar families in the first and second group seem to maintain themselves or supplement their small agricultural incomes by engaging in these odd jobs.

INTEREST

Income from interest which is derived by lending money is more or less the same in the first and second groups, while it is practically nothing in the third group. The important point to note, however, is that it is the lowest of all the different kinds of subsidiary incomes; firstly because Banias have generally the monopoly of money lending, and secondly because only a very few cultivators are rich enough to carry on business. Only very recently the rich cultivators have begun lending. They would lend the surplus of their incomes over their expenditures to the poorer cultivators. But they are much more insistent of repayment of their loans, especially when they have to meet the expenses on some important social function, e.g. marriages or deaths.

MAIN REASONS WHY SUBSIDIARY INDUSTRIES SHOULD BE REVIVED IN THE TALUKA

It will be observed from the above description that the existing industries in the taluka are very few and that except cattle breeding only a limited number yield a substantial income. In an agricultural area rural industries should occupy an important position. It is more so in this taluka for several reasons. Firstly, the amount of land cultivated by a family is far below the economic holding.¹ Secondly, the cultivation of this small holding is extensive² and this allows more than sufficient leisure to cultivators. "The problem is how to utilise their idle hours which are equal to the working days of six months in a year".³ Thirdly, even if intensive agriculture

¹ Vide Chapter 4, Section F. "Economic Holding".

² Vide Chapter 4, Section F. "Problem of diminishing yield and soil exhaustion".

³ Vide Harijan, by M. K. Gandhi, page 316, date 16, 11, 1934.

is adopted, people will have ample spare time at their disposal. There are periods in agricultural activity, both short and long, when a cultivator has to wait and watch the natural movements. Fourthly, the cultivator's bullocks are unemployed for about seven months in the year and the cost of feeding them is an extra unproductive burden on his small income. The cultivator can utilise his animal power in some one or other suitable industry. Fifthly, women who form nearly half the population of the taluka are not actively engaged in agriculture and get much spare time besides their domestic work to engage in the home industries. Sixthly, as at present, agriculture is the only source of living for a villager, the pressure on land increased by 7 per cent. between 1881 and 1921. Agricultural holdings are becoming smaller and smaller and an average holding which was six acres in 1901 was reduced to less than three acres in 1921. So long as the pressure on land continues, agricultural holdings would tend to be uneconomic and the amount of land available to each farmer for cultivation would be smaller and smaller. Sub-division of land and fragmentation of holdings would tend to be uneconomic and the amount of land available to each farmer for cultivation would be smaller and smaller. Seventhly, the total income both agricultural and otherwise (income from subsidiary occupations) is in 57 per cent. of instances insufficient to maintain a family in decency.¹ As the Broomfield Committee observes, "the pursuit of agriculture is not a lucrative one in most parts of the world. It is not the means by which fortunes are made".² And when we suggest cottage industries we only want to provide the peasants at least a competence. Eighthly, the idle people in the villages devote their long intervals of spare time to such things as litigation, gossiping and other wasteful occupations. Revival of cotton industries alone can relieve the agriculturist of his poor condition. The Famine Commission of 1880, rightly observed, "at the root of much of the

¹. Vide Chapter 11, Standard of living.

² Report of the special inquiry into the Second Revision Settlement of the Bardoli and Chorasi Talukas, by R. S. Broomfield and R. M. Maxwell, 1929, page 60.

poverty of the people of India and the risks to which they are exposed in seasons of scarcity lies the unfortunate circumstances that agriculture forms almost the sole occupation of the mass population".¹ The wealth of a country depends greatly on the utilisation of its human power. In our country this is largely wasted in the biggest industry.

NATURE OF INDUSTRIES

There are three types of industries which could be run in the taluka. They are (1) Large scale permanent industry, (2) Seasonal industry and (3) Cottage industry.

(1) LARGE SCALE PERMANENT INDUSTRY

Apart from the difficulties of obtaining big capital and disposing of the goods produced on a large scale, these industries are not suited to agriculturists as they require whole time work. They can, however, be recommended in rural areas to provide employment to a part of the rural population and thus help to reduce the pressure on agriculture. But they should fit in with the development of rural handicrafts which can be taken as subsidiary occupation by the cultivator. Thus glassware which cannot be made at home can be made at a village factory, but the cloth which can be easily made at home should not be made at a village weaving and spinning mill.

(2) SEASONAL FACTORY

Seasonal factories can be recommended in rural areas as they do not interfere with the main activities of an agriculturist. The farmer is always free between March and June for about four months, without any break, and any industry that can be carried on during this period would prove a blessing to him. Thus jaggery making or Tobacco preparing for chewing and smoking or Dal splitting can be easily undertaken in the area.

(3) COTTAGE INDUSTRY

The cottage industries like spinning, weaving, rope making, basket making etc., would most suit the agriculturists

¹ Quoted from "The Indian Money Market", by K. K. Sharma, page 87.

as they can be carried on or stopped at any time of the year. They allow the agriculturist to attend to his farm. Again, they need little capital, are easily learnt and do not require high skill in manufacture.

USE OF MECHANICAL POWER

Large scale perennial industries and seasonal industries require mechanical power. But the cottage industries too would benefit if we use mechanical power, whenever possible. It lessens cost of production, raises the quality of the product and ensures the stability of demand in the market. It also saves labour and time. The use of mechanical power, however, should not upset the economic equilibrium of the individual families in rural areas. Thus while the setting up of independent hulling or grinding mills is not advisable (as it deprives work of women folk of the whole village), any contrivance that reduces labour and time spent after hulling or grinding at home would be welcome. Similarly, while spinning and weaving in a village mill is against the interests of those village crafts, any contrivance that gives greater output with less labour and time at home in those crafts is beneficial. Thus each home would preserve its economic independence and its members would save time which can be utilised for cultural development.

INDUSTRIES SUGGESTED FOR THE TALUKA

The rural industries which are at present carried on by the people to some extent can be revived and re-organised in the taluka. A few more industries could also be introduced into the taluka. They are :—

- | No. | Name of the Industry. |
|-----|---|
| 1. | Jaggery making. |
| 2. | Bone crushing. |
| 3. | Refined tannery. |
| 4. | Butter making. |
| 5. | Collection of indigenous shrubs available in the fields for use as medicines. |
| 6. | Bee keeping. |
| 7. | Pharmaceutical works. |

It is not possible within a single chapter to deal with each and every industry in its all details. We would therefore, refer to the three important industries, viz. spinning, weaving and jaggery making and make general remarks regarding the rest.

REQUIREMENTS FOR THE REVIVAL OF COTTAGE INDUSTRIES

The main requirements for the revival of cottage industries may be said to be as follows :—

- A. Raw Materials.
- B. Labour.
- C. Capital.
- D. Organisation.

A. RAW MATERIALS

The taluka would require to cultivate cotton on $2\frac{1}{2}$ thousands acres if it is to meet the normal demand for clothing of its inhabitants.¹ The area under cotton has varied between $2\frac{1}{2}$ to 6 thousands of acres during the last 15 years and the taluka would not suffer from scarcity of raw cotton if it revives spinning and weaving industries. But the difficulty is that cotton produced in the taluka is inferior to that of Broach and the Khaddar produced would be rough and not durable. This difficulty could be overcome by the introduction of better staple which would flourish on the rich soil of the taluka.

The taluka would require cultivation of sugarcane on 1000 acres if it were to meet its demand for jaggery fully.² Un-

¹ "For meeting the normal demand of 12 yards cloth per head per annum only $\frac{1}{16}$ th acre of land is necessary." Economics of Khaddar, 1928, by R. B. Gregg, page 202. On this basis, the yearly demand of the total population of the Taluka which is 1,44,046 (1921) could be met from 2,400 acres.

² According to our food survey the average consumption of Gul in a year per family is about $1\frac{1}{2}$ maunds. As there are 24,000 families in the taluka, the total consumption of Gul would be about 36,000 maunds a year. The Gul obtained per acre varies from 36 to 50 maunds (page 82. Sugar in India, by H. H. Ghosh). Taking the minimum, the taluka would require 1,000 acres to supply its normal demand for Gul.

fortunately owing to the heavy expenses involved, sugarcane is not cultivated in the taluka though its soil is most suitable.¹ The experiments made by the Agricultural Development Association for Borsad proves that sugarcane could be grown successfully wherever there are sufficient irrigation facilities. There are 145 pumps in the taluka and if each pump irrigates a minimum area of 50 acres the total number of pumps would serve more than 7,000 acres. Hence the potentialities of Gur making are extensive in the taluka. The Gur factory, however, must be in the neighbourhood of cane fields so that the transportation charges of bulky canes may not be very heavy. Experts should see that better varieties of canes should be grown, for improved canes would give greater output of Gur. The report of the Director of Agriculture, Bengal, informs that "improved canes have raised the normal Gur from 36 maunds per acre to about 50 maunds per acre".² The process of Gur making is also very easy. The canes are crushed in a *Kolu* by animal power. The juice is boiled in open pans to a thick consistency which solidifies, becomes cool, and is known as Gur. When made in clean manner it is a perfectly wholesome food.

Again oil extracting industries and manufacture of hair oils, perfumeries and medicines could be developed with the help of oil seeds which are grown on more than 3,000 acres. Bidi making and preparation of chewing and smoking of tobacco could also be undertaken on extensive scales as tobacco is cultivated on about 15 to 20 thousands acres and exported in raw state in large quantity every year. Ropes are at present imported and the rope industry could be revived by the cultivation of hemp which occupies at present 1,000 acres. Tuer forms the most important food stuff which is exported in large quantity every year. If Dal instead of Tuer grains were exported the taluka could secure greater

¹ "It flourishes best on soil composed of a mixture of sand and clay in such proportion that air and water can easily reach the upper stratum. Such soil would really be termed as 'a loam' in which ploughing, hoeing and digging could be done with ease." Sugar in India, its manufacture, trade and cultivation, by H. H. Ghosh, 1934, page 69.

² Quoted from 'Sugar In India', by H. H. Ghosh, page 82.

profit by employing some of the people in its hulling industry. Apart from this, the taluka hedges contain indigenous raw medicines. It has also a variety of fruits from which juices may be extracted. Toys and furniture can be manufactured from the woods in the taluka.

The taluka is famous for its cattle. If organised efforts are made to procure animal products like milk, hides, bones etc., they would be available in plenty. These raw materials can be manufactured into finished products, e.g. ghee can be manufactured from milk, butter from cream, shoes and other leather articles from leather and manure from bones.

B. LABOUR

Without labour no production is possible. We have observed that agriculturists are under-employed for about six months in a year. They could easily use their spare time in any convenient rural industry. As for spinning and weaving, the total labour required in the family per day for meeting its entire clothing needs for a year is only $2\frac{1}{2}$ hours, or half an hour per day per head.¹ If these labour were done the taluka would be self-sufficient with regard to its clothing requirements. The taluka cultivators can also spare much time for the conduct of other industries. The difficulty however is that 90 per cent. of them are illiterate and can supply only unskilled labour. Industrial organisation requires both skilled and unskilled labour. The supply of skilled labour in villages should be increased by the spread of general and technical education. We suggest that at least one school should be started at Borsad to provide technical education to the people. Scholarships should also be given to the sons of cultivators who show more than average capacity to learn. General education cultivates taste and widens outlook while technical education will improve efficiency which is so badly needed among Indian labourers. Again with industrial education a greater use of mechanical power even in the cottage industries would be possible. This will encourage suitable changes in the

¹ Economics of Khaddar, 1928, by Richard B. Gregg, page, 201.

methods of production which may reduce costs and improve the quality of products. A skilled labourer can easily adopt himself to the production of articles which suit the tastes of his consumers.

C. CAPITAL

(1) *Available Capital* :—The capital available for financing the agricultural and industrial needs of the taluka is very inadequate. More than 80 per cent. of the taluka people are agriculturists and have a very small and fluctuating income which is merely a gamble in rains. One can hardly expect large profits from agriculture. In our survey it was found that 57 per cent. of the cultivators had not enough income to meet even their primary wants. Moreover cultivators live lavishly during bumper harvests and starve in famines. There are about 6 per cent. of the cultivators who can, if they wish, invest a part of their income in saving banks and other such institutions. But as we have observed in our chapter on indebtedness, a large part of their income is unfortunately spent on social ceremonies and other unproductive items. The rest of their savings is invested in gold, silver, and land.¹ These people are shy of investing their surpluses of the good seasons in industrial ventures. First, they are too ignorant to discriminate between lucrative and non-lucrative investments. Secondly, there is no trustworthy agency to assist and guide them in the matter. Thirdly, purchases of land enhance their social status as villagers always consider wealth in terms of land. But if an investment in land brings less interest than other forms of investments, people would prefer to purchase land. Fourthly, the fiscal policy of the Government does not guarantee protection against foreign competition.² Fifthly, facilities for investment are very few in the taluka. There are no joint-stock

¹ "The professional worker will invest his PUNJI (savings) in land which he can buy, mortgage or hire,... which he can bequeath to his children. ...for, of all village values, the most important and permanent is not money but land." *Caste and Credit in the Rural Area*, by S. S. Nehru, 1932, page 47.

² *The Indian Money Market*, by K. K. Sharma, page 92.

banks nor are there many post office savings banks in the taluka. The Co-operative Credit Societies which are 28 in number, do accept deposits from the people, but unfortunately they have touched only the fringe of savings. The village Showkar is the only agency which accepts deposits, but he is more interested in ruining his creditors than of helping them to make money.

(2) *Present Position of Capital Supply* :-- At present all industries whether big or small obtain finance from the Showkar and in a few cases from the Co-operative Societies. Banks in India hardly advance loans to industrialists and much less to agriculturists. There is only one bank in the District, a branch of the Imperial Bank of India, at Nadiad. But to ordinary people such a bank is unapproachable. It is the village Showkar who at present finances cottage industries. He acts also as a middleman. He advances loans partly in the form of raw materials and partly in cash on condition that the artisan should sell his products to him or through him. Sometimes he himself hires artisans and conducts industries. Thus whatever weaving activities are observed in the villages of this taluka are mostly carried on by these financiers who import yarn from outside and engage the weavers who are mostly Dheds, as paid labour. This method of financing cottage industries does not improve the economic position of the artisan who is at the mercy of the financier. But for sometime at least it will not be possible to do without the showkars. As the U. P. Industrial Finance Committee says "Whatever may be their drawbacks, we consider that indigenous financing agencies must be accepted as an indispensable part of the Indian society. Unlike modern banks which follow western methods of business, these indigenous credit agencies make their services available at the very door of their clients and their methods and technique have become familiar from time immemorial".¹ Simultaneously however, there should be organised other institutions like the Co-operative Societies which would supply cheap credit and compel the showkar through competition to become less exacting and more serviceable.

¹ Report of the U. P. Industrial Finance Committee, 1935, page 14.

(3) *Suggestions* :—We suggest therefore that investment facilities should be increased. Again, all efforts should be made to persuade rich persons to invest their savings in lucrative industries. The poor cultivators could also be induced to deposit their savings in these institutions instead of going after gold and silver ornaments which bring no interest. Propaganda should also be carried to convince peasants of the futility of their unproductive social expenses. The Government should also create confidence among the people by adopting a forward policy of assistance to industrial enterprise.

(4) *A Co-operative Industrial Society* :—In order to obtain finance for the rural industries, the taluka should organise a Co-operative Industrial Society. Industrial activities in the West have always been financed by the banks of their countries. Thus, Societe Generale De Belgique, established in 1822 in Belgium was the first joint-stock bank in Europe to finance the industries. Similarly, Banques D'affairs in France, Trust banks in Switzerland, Societa Finanziaria Italiana in Italy, Industrial Trust Companies in Ireland, Issuing houses in England and German Banks in Germany supply long and short term loans to the industries of their countries.¹ The Indian Banking Inquiry Committee suggested the establishment of an All-India Industrial Bank as well as of Provincial Industrial Corporations to finance Indian Industries. For a smaller area like the taluka, we would suggest that a Co-operative Industrial Society should be organised with prominent local leaders as their directors, to accept deposits and to lend money for productive purposes, specially the rural industries. It should act as the agent of the District Co-operative Bank or the Provincial Co-operative Bank which will discount its bills and advance loans in times of need. The Government can also advance loans to the society at cheap rates of interest. This would enable the society to lend money at cheap rates to its own members. At present most of the credit obtained by the people is secured on Khandha system at a rate of about

¹The Indian Money Market, by K. K. Sharma, page 91, 92 and 93.

30 to 40 per cent. "But few industries at present time can earn a 12 per cent. margin of profit even taking into account the fact that the cottage worker's labour charges are very low since they work in their own houses and during their spare time".¹ We believe that if credit could be provided at cheaper rates, say at not above 12 per cent., the economic condition of the artisans may be improved greatly. Further, the proposed society, can do a great deal of useful work in helping the cottage industries if it functions on right lines. It may appoint agents in some of the big villages of the taluka and can supply raw materials on advantageous terms and instruct and guide artisans in matters of quality, standard and design and provide facilities for the making of the cottage products.

There are a number of small cottage industries in the taluka, but we would suggest that in the initial stages financial facilities should be given only to a selected few (like spinning, weaving, rope making, bone crushing, gur making etc., which have good prospects, so that some success would be attainable without difficulty. The success of this initial venture and the experience gained therefrom would be of help in the later stages when other industries are taken up.

D. *Organisation* :—Economists now consider 'organisation' as one of the most important factors of production. Land, labour and capital would achieve very little if they were not properly organised. The function of organisation in production is to get the fullest value out of all factors of production, and to secure maximum efficiency. The skilled organiser is always trying to bring down cost by modifying his method of production. Besides, he studies the consumer and adjusts production to his tastes and means. In brief, organisation includes the technique of management which supervises each and every aspect of production from the purchase of raw materials to the sale of the finished products.

At present there is a dearth of entrepreneurs of this type in our villages. Whatever little organising capacity exists in rural areas is to be found concentrated in the more important

¹ The Report of the U. P. Industrial Finance Committee, 1935, page 19.

marketing towns. Moreover to-day it is devoted almost wholly to the business of money-lending and sale of agricultural crops. Little is available for the organisation of cottage industries. In this state of affairs rural areas will have to draw the supply of enterprise from outside. The most efficient manner in which this can be done would be to make use of Co-operative Industrial Society. This society will have a long time to come to supervise the work of small artisans, working in their own homes and arrange for the supply of raw materials and tools and for the distribution of their products.

D. (b) *Marketing* :—No industrial activity can succeed unless it is backed up by adequate marketing facilities. At present the village showkar acts as a middleman in some cases, e.g. sale of clothes. But he is not a purely commercial agent, his time and energy are claimed by a number of other activities. He is not therefore always an expert in marketing. His profits are secured mainly by driving down the prices of the commodities, that he buys from the producers in the village, and he will adopt fair means or foul to achieve his ends. This has resulted in the deterioration of the quality of village products. Nor can the village artisan do without the showkar. If he wants to sell his commodities on his own, he will require large resources which he does not at present possess. For, he will have often to supply goods on credit. Moreover, he does not know where to sell and how to sell. Most of the artisans are poor, illiterate and conservative. They lack enterprise and the outlook of entrepreneurs.

It is here exactly that a Co-operative Industrial Society ought to be helpful. It can receive the manufactured articles from the producers and arrange for their sale. The Government may also encourage the holding of periodic industrial exhibitions at suitable centres where village products could be exhibited. There should also be other kind of propaganda and publicity in the interest of village industries.

We think, however, that if the villagers prefer their village made articles however rough and costly they may be during the initial stages, the obstacles of marketing and difficulties of competition would be greatly minimised. Of course,

efforts should be made to improve the quality of the product and to cheapen its cost by advising artisans on technical aspect of production. It is in this way that Khaddar could compete with mill made cloth.

We quote below the cost of a lb. of mill made cloth and that of Khaddar,

MILL-MADE CLOTH

No.	Item of expenditure	Cost of manufacture of a lb. of mill-made cloth
1	Coal	10 09
2	Stores	14 46
3	Labour	39 69
4	Office supervision	8 41
5	Fire insurance	1.67
6	Municipal and other taxes	1 57
7	Interest	5.66
8	Commission on cloth	4.60
9	Agent's commission	0.88
10	Income tax and Super tax	1.94
Total pies		88 92=Ans. 7

KHADDAR

No.	Item of expenditure	Cost of manufacture of a lb. of Khaddar		
		Rs.	As	P.
1	Carder's wage	0	1	0
2	Spinner's wage	0	8	0
3	Weaver's wage	0	7	6
4	Add. Depreciation in materials		0	0 6
Total			0	12 0

Thus there is a difference of annas five between the costs of manufacturing two kinds of cloth from one lb. of cotton. The difference per yard between the two is annas two only.¹

We see from the above that a pure consumer i.e. one who

¹ Economics of Khaddar, by S. B. Gregg, page 182.

does not card his cotton or spin his yarn has to pay extra two annas for a yard of cloth if he prefers Khaddar. As soon, however, as the consumer becomes his own carder and spinner, he saves four annas and the costs of producing a yard of mill cloth and of hand spun Khaddar are nearly equalised. A final stage in the development of economics of handspinning is reached when the spinner not only gins and cards himself, but stocks his own cotton as he once used to do. Here he gets the cloth cheaper than the mill-made cloth would cost him because he has not to pay charges for transport and middleman's profit. Nay more. To an agriculturist growing cotton, the price of a few lbs. casually picked for home consumption before the harvest is marketed, will be of no consequence, and he will therefore have this cloth just for the weaver's wage.¹

Again, the dearest self-made article is cheaper in the end than an imported one. It is futile to compare a self-made article to an imported one, as exploitation of the peasant in some form or other is inevitable if he buys imported cloth.

CONCLUSION

The revival of industrial activity in rural areas would certainly bring sun-shine into the dark life of our poverty stricken peasantry. It would bring back self-reliance, self-respect and economic independence to the peasant. Again the pursuit of arts and crafts is a joy in itself in as much as it brings out talents that would otherwise lie suppressed. It would help women folk and specially widows who are otherwise helpless. Love for litigation, immoral tendencies and habits of dissipation which are the evil consequences of under-employment among the peasants would gradually disappear and we shall have a peasantry which will be the pride of the countryside.

¹ Economics of Khaddar, by S. B. Gregg, page 183.

APPENDIX A.

A table showing the number of hand-looms and oil presses in the different villages of the Taluka in 1934-35.¹

GROUP I

No	Name of the village	No. of hand-looms	No. of Oil-presses
1	... Anklav	2	4
2	... Alarsa	6	3
3	... Asodar	3	5
4	... Ambali	-	1
5	... Ambai	6	2
6	... Borsad	108	22
7	... Bodal	3	1
8	... Bhetasi (Talpad)...	-	1
9	... Davol	9	3
10	... Dehmi	-	2
11	... Dabhasi	19	1
12	... Harkhapura	-	1
13	... Khedasa	2	1
14	... Kantharia	2	2
15	... Khadol	-	2
16	... Muchkuva	-	1
17	... Nisaraya	6	1
18	... Napa (Talpad)	-	6
19	... Pamol	1	1
20	... Ras	6	2
21	... Saijpur	-	1
22	... Vehra	1	1
23	... Vasna	4	2
Total		178	66

¹ The figures are received from the Taluka Development Agricultural Association, Borsad

GROUP II

No	Name of the village	No of hand-looms		[No of oil-presses]
1	Ashi	...	...	2
2	Amod	...	21	1
3	Banejada	...	2	1
4	Bamanwa	...	—	3
5	Bhavanipura	...	6	2
6	Bochasan	...	26	3
7	Danteli	...	—	1
8	Isnav	...	21	2
9	Jantral	...	—	1
10	Khanpur	...	—	2
11	Khadana	...	29	3
12	Palej	...	9	2
13	Pandoli	...	38	7
14	Pimplav	...	14	4
15	Porda	...	20	1
16	Sunav	...	2	5
17	Santokpura	...	11	—
18	Varadala	...	—	3
19	Virol	...	2	2
20	Virsad	...	6	2
21	Vadeli	...	4	1
Total		211	...	48

GROUP III

No.	Name of the village	No. of hand-looms	No. of oil-presses
1	Amrol	...	1
2	Badalpur	33	1
3	Bhetasi (Vanto)	—	2
4	Dehvan	31	2
5	Gorwa	3	—
6	Kanwadi	—	1
7	Kankapura	—	1
8	Kathana	10	1
9	Kothiakhad	—	1
10	Napa (vanto)	2	1
11	Ralaj	—	2
12	Salol	8	1
13	Amiad	7	1
14	Kathol	—	1
15	Kanbha	2	9
16	Umlav	4	2
17	Vatra	—	2
Total		100	29

CHAPTER VII
TRADE AND TRANSPORT
SECTION A.
TRADE

EXISTING STATE OF MARKETING

Advantages of well organised markets to an agriculturist are obvious. Unfortunately, we have no organised markets in the taluka. There is no gradation of products, no warehouses, no system of keeping proper accounts and no protection to the seller who is in most cases an agriculturist. The market is exclusively controlled by the village showkars. The determination of the prices of products are absolutely in the hands of Banias. Knowing the dependent condition of the peasant, he can alter the current price of a product to suit his interest. He is shrewd enough to perceive the financial predicament of the peasant as he remains in closest contact with him. So when he knows that a peasant wants to sell his harvest, either to pay land revenue or rent or to repay taccavi or other loans, he would at once offer low prices for the products in the absence of a competitive organised market. The peasant has to accept his price. If the Bania knows that he needs money to marry his children or for death feast, he would lend him the necessary corn, clothes etc., required on the occasion at high prices and at the same time make a bargain for the future harvest at low prices. Thus a peasant is always a loser in the ordinary village market. In the big markets at places like Borsad, Ankлав, Kathana, etc., though he gets 5 to 6 per cent. higher prices he does not derive a greater gain. More often than not, he is persuaded by his village Bania to sell his products to him at the village rather than undergo the long journey in cart to the distant market. He is reminded of his past obligations and he is threatened with refusal in the future. If, however, he still goes to the market, he often returns disappointed.

For, in these markets too, he is not in a much better position. Prices vary from shop to shop and merchant to merchant. The middlemen are cunning. There is no arrangement for gradation of commodities. Often false weights are used. When the peasant reaches the market, none pays any attention to him despite his solicitations. If, however, anyone troubles to take notice of him, he would resignedly inform the peasant that his goods are inferior in quality and that there is no market for them. Thus the needy peasant is left at the mercy of the village Bania and there being no other alternative he has to sell his goods at whatever price the Bania offers. He would prefer to sell the goods at a low price to carrying them forward to the market and back home. He is too poor to afford corn-preserver wherein to store the goods. One often finds that corn which weighed 18 maunds at home weigh only 16 maunds in the Bania's shop. Besides deductions are made by the merchant for religious and charitable purposes irrespective of the wish of the cultivator. Large samples of produce are taken free of charge. The custom of taking a seer (a lb.) or more with each maund weighed is also another method by which the farmer is mulcted. Again, agents who act as intermediaries between the vendor and the vendee determine the price of the product by showing fingers to one another hidden under cloth. So the cultivator remains ignorant of what is happening. The broker generally favours the Bania purchaser with whom he deals daily rather than the cultivator.

EXAMPLES OF MARKETING OF AGRICULTURAL PRODUCTS

In support of the above statements we give below some examples of the marketing of Tobacco and Tuer which are important agricultural products in the taluka.

SALE OF TOBACCO

Tobacco is generally sold through Patidars who act both as middlemen and merchants. Though they are less cunning than the Banias, their methods in business of tobacco are no more above reproach. The result is that the peasants who

devote a large part of their land to tobacco cultivation, lose heavily when they sell raw tobacco. We give below two examples taken from the diary of a middleman in Anklav and showing how deductions are made from the legitimate price of tobacco.

Example I.

Product :—Tobacco, sacks 18.

Village :—Ambali.

Sellor :—A Dharala. Cultivator.

Price of Tobacco: —Rs.4-4-0 per Maund (One Maund=40 Lb.) and (one lb=40 tolas.)

Date of sale?—28th January 1934.

Date of receiving money—2nd March 1934.

Mds. Lbs.

21 — 21 Gross weight of 18 sacks.

0 — 18 Deduct an extra lb. of NAMAN per sack.

0 — 36 Deduct the weight of sacks, each sack weighing on an average 2 lbs.

20 — 07

2 — 1 Deduct 4 lbs a maund as per custom.

18 — 06 Net weight of tobacco for which the cultivator is paid at Rs. 4/4 per maund. This would fetch Rs. 77 $\frac{1}{2}$. But following deductions are made even from this amount.

Rs. As. Ps.

77 2 0 The total value of 18 sacks at Rs.4/4 per maund
6 2 0 Deduct 8% discount.

71 0 0

1 0 0 Deduct the middleman's SAKAR.

70 0 0 Net amount to be given to the seller.

A *Hundi* for Rs. 70/- only is drawn upon the village showkar (who finances such trade) in favour of the cultivator to be payable after 30 days. The showkar, however pays more often after 45 days.

Example 2.

Product :— Tobacco. Sacks 97.

Village :— Anklav.

Seller :— A Patidar cultivator.

Price of Tobacco :— Rs. 5/5 per maund.

Date of sale :— 25th February 1934.

Date of receiving money :— 12th March 1934.

Mds. Lbs.

111 — 29 Gross weight of 97 sacks.
 2 — 17 Deduct an extra lb. of NAMAN per each sack
 4 — 34 Deduct the weight of sacks, each sack weighing on an average 2 lbs.

104 — 18

10 — 18 Deduct 4 lbs. a maund as per custom.

94 — 0 Net weight of Tobacco valued at Rs. 499/6/- at Rs. 5/5/- per maund. From this amount deduct 10% or Rs. 50/- as discount if the money is payable in 15 days. The discount is higher the earlier the cultivator wants to receive his money. Thus there remains :—

Rs. As. Ps.

449	6	0	
1	0	0	Deduct for charity.
3	6	0	Deduct payment to middlemen for SAKAR
445	0	0	Net amount to be given to the seller.

A *Hundi* of Rs. 445/- is drawn upon the village Bania in favour of the cultivator to be payable after 15 days.

SALE OF TUER

Tuer is sold by the cultivator after he has reserved a sufficient quantity for the yearly need of his family. Some of the cultivators have to sell all tuer to meet the pressing demands of their creditors. When he has a full cart load, the cultivator would go to the nearest marketing town in the hope of getting better prices. After the bargain is struck, the grain is weighed by a weigh-man known as *Tolanio*.

who is seldom honest and always understates the weight of the produce. The proceeds of the sale are given to the cultivator after deducting the commission of the agent and the charity charges which go specially to maintain *Panjarapoles* and *Parabidis* or institutions which maintain old and infirm cattle and which supply grain and water to the birds. The showkar exports the produce to Surat, Bombay and elsewhere.

Ghee and milk are also exported from the villages. The Bania collects ghee, wandering from house to house and exports it in tins to Baroda, Bombay and other cities. The milk is collected by *Sanchhawallas* or persons who have installed cream separating machines in the villages. There are about 15 such machines in the different villages of the taluka. The milk is churned into cream which is sent to Anand and Bombay and also Ahmedabad. The public do not like the installation of such machines in the villages. They think that the installation of the machine helps the export of milk from the village and the local people have to suffer in their necessities. For this reason many *Sanchhawallas* have to pay Rs. 100/- or more a year to the village Mahajan for permission to collect milk.

MARKETING CENTRES IN THE TALUKA

Borsad, Anklav, Bochasan, Virsad, Ras, Pandoli, Dehvan, Kathana and Umota are the chief marketing centres in the taluka. Of these Dehvan and Umota are situated on the Mahi where goods are carried across the river. To these marketing villages goods are imported and from there distributed to the surrounding villages. They are also the centres where raw products are stocked for export outside the taluka. Peasants bring their goods in carts to these markets and sell them to the showkars who eventually sell them to outside merchants in Bombay and elsewhere. Moreover, Petlad and Agas on Anand Cambay Railway and Anand and Vasad on B. B. & C. I. Rly. are attractive markets to some of the villages of the taluka, owing to their favourable situation.

POST OFFICES IN THE TALUKA

Post offices play an important part in the trade and commerce of the country. The taluka has only one main post and telegraph office at Borsad and 17 branch post offices at the following villages :—Davol, Asodar, Bhetasi, Umela, Anklav, Alarsa, Bochasan, Virsad, Vatra, Dehvan, Ras, Napa, Sunav, Pimplav, Palaj, Pandoli and Porda. In the branch offices, the village school masters work as the Post Masters.

PRICES IN RELATION TO DISTANCE FROM A MARKET

Prices of the same commodities in the villages of the taluka vary according to their distance from a market and the condition of the road to it. If the roads are bad prices differ, even if the village is not far from the market. Thus prices of the same commodities are more or less the same in the villages of the first and second group (except the marketing villages) because of similar condition of trade and transport in them. But they are different in the villages of the third group. The villages in the first two groups are nearer to markets and better equipped with roads than those in the third. Hence prices in them differ greatly from those in the villages of the third group. This variation of prices has already been noticed with regard to agricultural products. Generally products which are exported fetch lower values in villages away from the market. Thus in the course of our inquiry in 1933-34 we found that while jaggery was sold at Rs. 2/8- a maund in Anklav, it was sold at Rs. 3/- a maund at Sankhiad, a village five miles from Anklav, and situated on the bank of the river Mahi. There were similar differences in the prices of other commodities. The same commodity was sold at Khadol, 4 miles away from Anklav in the north, at only Rs. 2/9- a maund. The reason was quite obvious. Khadol being favourably situated, prices in it could not differ from those in Anklav; while prices were higher in Sankhiad as it is situated in the ravines of the Mahi and connected by bad roads and inhabited by poor cultivators.

SUGGESTIONS

The advantages of sound marketing organisation to an agriculturist are obvious. It protects him both as a producer and a consumer. It creates confidence in the peasant that his raw products would fetch him a fair price whenever he can go to a market. This encourages him to grow crops which are profitable to him. Standardisation of products encourages him to improve the quality of his seed and thus an impetus is received for agricultural improvements. In brief, a cultivator sells in the dearest and buys in the cheapest market with a well organised marketing system. We suggest therefore, that immediate efforts should be made to extend marketing centres and to organise them properly. Nowhere in the taluka is the extension of marketing centres more urgently needed than in the third group of villages. An organised market implies the existence of fairly accurate information regarding the distribution, collection and storage of crops standardisation of weights, gradation of commodities and the presence of licensed middlemen. Corrupt practices should be strictly prohibited and a vigilant watch should be kept over cunning merchants. The Government should also help in the establishment of good markets and should follow the lead given by the U. P. Government in the matter of marketing re-organisation by the appointment of officers to deal with the disposal of agricultural products. At present, the markets in the taluka are controlled by the village Mahajans or by associations of showkars, which exercise little influence to stop the cunning tactics of the village Banias. Sometimes the Banias work against the interest of the peasants by mutually agreeing not to purchase a particular product unless its price is reduced to a particular level. We suggest therefore, that the market should be controlled by a committee consisting of merchants and cultivators, whose decision on a disputed point should be final. Secondly, we suggest that a Co-operative Sale and Purchase Society should be established at each marketing centre. At present, the Co-operative Movement in the taluka is too much occupied with credit organisation as it is insufficiently equipped for sale and purchase activities. But this difficulty should not be

an excuse for delaying the establishment of the sale and purchase society. The cultivators sell their produce cheap generally at the harvest time to meet their obligations. But if the Co-operative Movement steps in and advances loans to the cultivator against his crops, he need not sell his products at low prices. The society can keep the harvest in the warehouses, deal directly with the big merchants from outside and save many incidental charges that an individual cultivator has to incur. The problem is more thoroughly treated in the chapter 9.

INWARD AND OUTWARD TRADE OF THE TALUKA

The taluka sends out certain raw products, viz. tuer, tobacco, cotton, and ghee and purchases food grains and finished goods from outside its boundaries. The taluka villages are closely intermixed with those of the Baroda State territory and much business is conducted with and through them. So in the absence of reliable statistics it is impossible to secure any estimate of the 'inward' and 'outward' trade of the taluka.

However, in order to form some idea of the trade of the taluka, we give below figures of the commodities sent out and brought in by railway at the station of Borsad during the years 1931-1934¹

OUTWARD GOODS

No	Commodity (A maund—80 seers or lbs.)	1931	1932	1933	1934
		Mds.	Mds.	Mds.	Mds.
1	Tobacco	46,192	55,461	71,814	65,718
2	Cotton seeds	8,983	—	—	—
3	Cotton (wagons) (wagon-10 tons)	—	20	85	22
4	Khaddar cloth	668	704	484	825
5	Old copper Etc.	—	468	778	950
6	Bidi	305	811	246	283
7	Ghee	—	—	—	—

These figures were kindly supplied to us by the Station Master of Borsad.

TRADE AND TRANSPORT

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Number of outward passengers from Borsad.

1931	1932	1933	1934
82,284	81,919	65,276	68,974

Number of inward passengers into Borsad.

1931	1932	1933	1934
71,986	68,899	61,594	68,722

INWARD GOODS

No.	Commodity	1931 Mds.	1932 Mds.	1933 Mds.	1934 Mds
1	Grain	72,380	62,553	91,186	1,07,049
2	Cotton seeds	26,081	26,606	31,710	49,171
3	Sugar	9,105	6,380	9,393	12,504
4	Jaggery	2,007	12,090	11,216	11,840
5	Oil etc.	—	8,309	19,264	13,289
6	Bidi leaves	—	2,803	2,587	1,925
7	Cloth	2,753 ¹	2,670 ¹	2,068 ¹	6,668
8	Iron	—	4,029	4,691	4,212
9	Copper etc.	134	430	948	1,077

(The following figures are given in wagons, each wagon contains on an average 500 Mds.)

10	Timber	25	83	86	88
11	Fire wood	—	10	17	8
12	Road metals	—	12	2	9
13	Coal and coal ashes	17	54	44	80
14	Stone	10	18	11	14
15	Sand	76	108	58	95

It will be observed from the above figures that tobacco, cotton, bidi and ghee form the chief 'outward' goods of Borsad, whereas grains (chiefly rice and wheat), cotton seeds, sugar, jaggery, oil, bidi leaves etc., are the chief 'inward' goods. The trade is heavier in winter and summer than in monsoon. The trade of other marketing centres are of a similar character. The only difference being, that

¹ These figures relate to goods that came in Parcel Trains. Figures of goods which came in Goods Train are not available.

whereas, Borsad does not send out tuer, the other centres send out it in large quantities. The tuer of Borsad and the surrounding villages is sent to Anand which has been a famous tuer centre for the last 15 years.

Next in importance to Borsad as a marketing town is Anklav. It commands the trade of about 20 villages in the eastern part of the taluka. According to a rough estimate by us (based on an inquiry from merchant to merchant in the village, 1933-34) we found that it sent out tuer worth approximately one lakh of rupees, tobacco worth 2 lakhs, ghee, milk and cream worth Rs. $\frac{3}{4}$ lakh and cotton worth Rs. $\frac{1}{2}$ lakh. The total 'outward' goods amounted to about Rs. $4\frac{1}{4}$ lakhs. The village brought in cotton seeds worth Rs. $1\frac{1}{2}$ lakhs, rice and other grains worth Rs. $1\frac{1}{2}$ lakhs, sugar and jaggery worth Rs. $\frac{1}{2}$ lakh, cloth worth Rs. 1 lakh, oil and kerosene worth Rs. $\frac{1}{2}$ lakh and miscellaneous articles like cement, iron, copper, brass, tea, etc., worth Rs. 1 lakh. The total 'inward' goods amounted to about Rs. 6 lakhs. It may be observed that the 'inward' goods exceeded 'outward' goods and the balance of trade was maintained by the sale of gold and the income derived from services outside the taluka. One will notice again that the taluka is not self-sufficient even with regard to its food supply and purchases from outside large quantity of grain every year. The nature of trade of other centres of market in the taluka is similar to those of Borsad and Anklav.

CHAPTER VII

TRADE AND TRANSPORT

SECTION B.

TRANSPORT

INTRODUCTION

In a taluka like Borsad where many of the raw products are exported and many of the necessities of life imported every year, the importance of good transport facilities are obvious. "True income of the cultivator is largely dependent on the efficiency of communications".¹ Good roads cheapen the cost of transport, encourage trade and enhance the value of products. They facilitate exchange of produce of one area with that of another. They encourage cultivators to grow profitable crops which have a high demand from outside. Socially, they bring different people in closer communion and break down the barriers of parochial narrowness.

ROADS IN THE TALUKA

There are three kinds of roads in the taluka. They are :—

- (1) Village Roads,
- (2) Metalled Roads,
- (3) Railway Roads.

VILLAGE ROADS

Nearly every village in the taluka is linked with the neighbouring villages by *Kachha* roads known as 'village roads'. Village roads are never built according to any particular scheme (as is the case with metalled and railway roads), but were originally carved out by streams of rain water. Any channel that joins two villages may be called a village road and a traveller journeying in the villages of the taluka has to pass through many such tracks before he reaches his destination. One cannot find a regular road joining many villages by the shortest distance. The tracks are not of

¹ Report of the Royal Commission on Agriculture, 1927.

uniform breadth. They are flooded with water during the monsoon and all communications between a village and the world outside are suspended. They are usable again when the rains stop and the water dries up. Even in summer and winter they are covered thickly with dust and develop big cracks. These and the uneven surface of the road bed put an unnecessary strain on the bullocks. The roads are bordered with thorny hedges on both sides. As most of them are narrow only 5 to 6 feet wide, they are often blocked by the branches of overhanging trees and hedges that straggle into the path. When two carts happen to come from opposite directions, they can pass each other with great difficulty. Once while returning late at night from Kantharia to Anklav we were detained for about an hour by such an accident. The way was cleared at last by cutting and removing hedges.

THE FIRST GROUP

Village roads in the villages of the first group are comparatively better. The villages are situated on a higher level than those in the second and third groups and the roads generally become dry as soon as the rains stop. The roads are also broader and less irregular.

THE SECOND GROUP

The villages are situated at a lower level and as the drainage water passes through these villages, many of the village roads are almost impassable for more than four months in the year. There are very few roads in this group which can be called roads. The cultivators have to pass through fields while going from one place to another. They suffer great hardships and their usual complaint is that one or two lives are lost every year by accident in monsoon.

THE THIRD GROUP

There are practically no cart roads in the villages of this group. If one at all calls them roads, they are the ravines of the river Mahi. They are uneven, sometimes low, sometimes slopy and sometimes very steep. A journey by cart along these ravines is always very difficult and sometimes risky.

METALLED ROADS

There are two metalled roads in the taluka. One is known as 'Vasad Borsad Road' which was built at a cost of Rs. 1,22,550 in 1877-78. It was designed to join Borsad, the chief town of the taluka, with the railway station Vasad. It is 11 miles in length. The second road known as 'Borsad Agas Road' is eight miles in length and was constructed in 1902-03 at a cost of Rs. 89,476/-. It joins Borsad with Anand (via Napa) and Petlad and Cambay (via Agas, a railway station on Anand Cambay Railway line). Both the roads are maintained by the District Local Board, Nadiad. Before the introduction of Vasad Kathana Railway in the taluka, these roads were very useful. Even to-day they are important, though much of their traffic has diverted to the railway. However, buses and horse carriages run regularly on these roads and carry passengers to and fro. It may be observed that railway and the bus-service do not compete nor affect the interest of one another, though both the services charge the same rates for the same destination. The reason is that the trains run only four times a day and passengers intending to travel at other times resort to the buses.

RAILWAY FACILITY IN THE TALUKA

The main B. B. & C. I. Railway passes through Vasad to the North East of the taluka. Another railway line called Anand Cambay Railway (opened as early as 1891) passes through the adjacent Anand taluka and the Baroda State territory in the North West of the taluka. Thirdly, a meter gauge line called Petlad Bhadrang line belonging to G.B.S. Railway passes through the State villages situated to the South West of the taluka. These lines do not pass through any of the villages of the taluka. However, because of their nearness to some of the villages of the taluka, they rendered valuable service and facilitated the export and import of the taluka until the construction of V. K. Railway. All goods were exported and imported through the adjacent railway stations on these lines. Thus Vasad commanded the markets of nearly 40 villages situated in the east of the taluka. The rest of the villages were linked to Anand, Agas, Petlad, Nar

and Cambay. The increasing trade of these centres induced the B. B. & C. I. Railway to construct a branch line in the taluka proper and in 1930 the Vasad Kathana Railway was built. The railway covers 26 miles and runs from the east to west. It passes through the heart of the taluka and touches almost all the important marketing centres. Nearly all its stations (except the flag stations) have become commercial centres for the surrounding villages. The goods which once were disposed of through the stations on the B. B. & C. I. Railway and Anand Cambay Railway lines are now disposed through these centres and so the trade of the earlier entrepot stations have been considerably affected. For instance, Vasad which was a most flourishing station before the opening of the V. K. Railway is now a deserted place, its trade having been diverted to Anklav.

EFFECTS OF THE RAILWAY ON THE TALUKA

The introduction of railways in the taluka has effected many changes for good and evil. One of the chief wholesome effects is that it brought many villages of the taluka nearer to the railway route. There are now only a few villages which are at a distance of more than five miles from the railway. In these days of increasing travelling and trade, it has saved both ordinary passengers and merchants the hardships of tiresome journeys in carts along dusty and uneven village roads. It has encouraged trade and increased export and import of the taluka. Borsad station exported 65,718 maunds of tobacco in 1934 as against 46,192 maunds in 1931. It imported 1,07,049 maunds of grain, 49,171 maunds of cotton seeds, 12,504 maunds of sugar, 11,840 maunds of jaggery and 1,077 maunds of copper in 1934 as against 72,380 maunds of grain, 26,031 maunds of cotton seeds, 9,105 maunds of sugar, 2,007 maunds of jaggery and 134 maunds of copper respectively in 1931. Similarly Anklav, another important railway station in the taluka, exported 1,20,399 maunds in 1933 and 88,653 in 1934 as against 21,106 maunds of tuer and tobacco in 1931. Its import of all kinds of goods amounted to 1,67,683 maunds in 1933 and 1,48,171 maunds

in 1934 as against 1,06,433 maunds in 1931.¹ Thus trade has increased by about 50 per cent. during the last 4 years. Various commodities like milk, ghee, bidis etc., which formerly could not be easily sent out of the taluka and therefore had to be consumed locally are now ensured profitable markets outside. So their prices have risen. The average price of milk which was two pice a seer (lb.) before the introduction of railway has now risen to three pice a seer and cream separators have been installed at villages adjacent to railway stations to collect milk. Similarly bidis which were once sold eight annas a thousand now sell at twelve annas a thousand. The railways have encouraged increased cultivation of commercial crops like tobacco in the taluka as consumption goods can be now cheaply imported from outside the taluka. The last but not the least effect of the railway is the contribution it has made to the revival of the port of Delvan, which because of its nearness to Kathana station, now receives hundreds of maunds of goods for export and import.

The railways are not however, without their evils. They have thrown out of employment hundreds of men and bullocks which formerly engaged themselves in carting. The high embankments of the railways are not provided with a sufficient number of wide water passages. Hence these embankments prevent the free flow of water and injure the crops of surrounding fields. It may be admitted however, that the advantages of railways have greatly counterbalanced the disadvantages.

EFFECTS OF EXISTING ROADS ON AGRICULTURE IN THE TALUKA

Though a number of villages are linked up by metalled roads and railway lines, there are still many villages which suffer greatly due to the bad condition of the village roads. Trade nearly comes to a standstill in monsoon. As most of

¹ The figures for Borsad and Anklav stations were received from the Station masters of the respective stations.

(The Railway figures indicate a maund of 80 seers (lbs.) each lb. or seer being of 40 tolas.)

the village roads are water channels, they are flooded with water and carts cannot move along them. The following table which gives export of tobacco and ghee of Borsad station in 1934 by months, will indicate how the volume of export decreases during the monsoon months.

A TABLE SHOWING EXPORT OF TOBACCO AND GHEE BY MONTHS IN 1934 FROM BORSAD¹

No.	Month	Tobacco Maunds	Ghee Maunds
(A maund=80 seers, a seer=40 tolas)			
1	January	7,744	300
2	February	8,650	255
3	March	9,599	300
4	April	10,831	105
5	May	8,937	93
6	June	3,270	70
7	July	681	57
8	August	425	15
9	September	1,027	—
10	October	3,262	40
11	November	3,310	115
12	December	8,532	702
Total		<u>65,718</u>	<u>2,052</u>

In monsoon the labourers cannot move from village to village in response to variations in labour. In summer and winter the bullocks suffer great strain in pulling loads over dusty and uneven roads. The carts wear out within a short time and bullocks lose their strength early. The carting charges remain high and cultivator is discouraged from carrying his goods to profitable markets and is placed at the mercy of the village Bania for their disposal. Bad roads similarly increase the prices of the imported goods and the cultivator suffers both as a consumer and a producer.

SUGGESTIONS FOR THE IMPROVEMENT OF ROADS

We suggest that there must be a trunk metalled road connecting all the villages of the taluka to the nearest market-

¹ These figures were taken from the records at the Borsad Station.

ing towns, so that business may not have to be stopped during monsoon. Construction of such a road is expensive and beyond the capacity of the existing taluka or district local boards. The initial expenditure must be borne by the Provincial Government and the running expenses should be borne by the local boards. It is the paramount duty of the Provincial Government to look after the needs of rural areas which supply a large part of its revenue. Almost all the commissions appointed for investigating problems of rural life have emphasised the importance of good roads in the countryside. Thus the Famine Commission (1881) believed that good roads were an essential preliminary to any scheme for the prevention of famines in India. The Industrial Commission of 1918 emphasised that industrial development in the country must be preceded by an efficient transport system. The Royal Commission on Agriculture in India, 1927, similarly stressed the importance of good communication in the interest of the peasants. We urge therefore, that the Provincial Government should endeavour to extend metalled roads in the taluka. The task of maintaining village roads has been transferred to the taluka Local Board which due to its low income spends little money on their improvements. Again, much of the money allotted for road improvement is being misused or misapplied. The greatest need of the taluka is to link each village with its neighbouring villages by good roads so that movements can continue even during the monsoon. As the villagers have ample leisure during summer, they can utilise it no better than in constructing new roads and repairing the old ones that surround their villages. The Government and the local boards would show their readiness to render financial assistance wherever necessary.

CHAPTER VIII

INDEBTEDNESS

INTRODUCTION

The most serious problem in rural India is the heavy indebtedness of the peasant. This is not a new problem. But the unprecedented and precipitous fall in agricultural prices during the last eight years which has reduced the monetary income of the peasants by half, has made the problem more complicated, more acute and more difficult of solution than it was before. It has been critically examined by various committees, commissions and rural surveyors in their books.¹

In the opinion of these persons the appalling moat indebtedness in this country has sucked the life-blood of the peasantry and seriously hampered its economic development. Several remedial measures were suggested and pressure was put on the Government to pass them for the relief of the agriculturists. Some provinces e.g. the Punjab, Bengal, U. P., C. P. etc., initiated measures for the redemption of the debts of their peasants. Bombay too contemplates an early introduction of such a measure in its legislative council.

So far as the taluka is concerned no inquiry into this problem seems to have been made to this day. The settlement reports have very little to say on the subject. During the last Non-co-operation Movement, the local congress

¹ Some of the famous books on the subject are as follows:—

- A. Report of the Deccan Ryots Commission, 1857.
- B. Report of the Famine Commission, 1880.
- C. Central and Provincial Banking Inquiry Committee's Reports in India, 1928-31.
- D. Report on Redemption of Agricultural Indebtedness in Bhavnagar State, 1933.
- E. The Caste and Credit in Rural Area, by S. S. Nehru, 1929.
- F. The Punjab Peasant in Prosperity and Debt, by M. L. Darling.
- G. Agricultural Indebtedness in India and Its Remedies, by Ray, S. C. 1915.
- H. The Farmer and His Debt, by A. Qureshi, M. A., 1934.

committee had undertaken to investigate the economic condition of the peasantry of the taluka which included the problem of indebtedness also, but the report has not been published yet. On inquiry, we found that the figures are in part missing and partly not well arranged. The task is very difficult, and can be undertaken only by somebody who commands the confidence of the people and receives assistance from the Government. Our survey, unfortunately, had to be carried out largely without Government assistance, while naturally the showkar or the money-lender was unwilling to part with the information which might go against him. The information regarding indebtedness that is presented here had to be collected solely from the peasants who, we must state, were reasonably helpful.

Debt is such a thing, that no one would reveal it all of a sudden. For to disclose it means loss of social prestige and loss of credit with the showkar. Loss of social prestige results in difficulties in marrying his children and in payment of high dowries. Loss of credit means difficulty in borrowing and the payment of the high rates of interest. He cannot purchase on credit necessaries of life like jaggery, sugar, spices, clothes etc., from the shop of his showkar. Hence the unwillingness of the average peasant to disclose to anybody the extent of his indebtedness. So with great difficulty we could elicit information from him. Moreover, since a peasant in the taluka does not keep regular accounts of his debts and relies on the account books of his creditors, we could not get at the exact records of debts and had to be content with only information orally imparted by the debtors.

EXTENT OF INDEBTEDNESS IN THE TALUKA

In the 37 villages comprising all the three groups, we selected 288 families whose total debt amounted to Rs. 2,53,165/-. Thus the average family in the taluka was indebted to the tune of Rs. 848/-. Of course, there are 51 families which were free from debt and if these were excluded the average debt per family would amount to Rs. 1068/-. Thus 21.5 per cent, of the cultivators in the taluka were found to be debt-free while 78.5 per cent. were involved in debts.

DEBT-FREE FAMILIES IN THE TALUKA AND IN OTHER PARTS OF INDIA

The percentage of debt-free families in the different provinces in India as well as in the taluka is given below.¹

No.	Name of the Province	Percentage of families free from debt
1	The Punjab	13
2	United Provinces	46
3	Bihar and Orissa	35 to 50
4	Central Provinces	46
5	Burma	14
6	Assam	15
7	Gujarat	22
8	Sindh	13
9	B O R S A D	21.5

It will be seen that the per cent. of debt-free families in our taluka does not differ appreciably from the per cent. calculated by the Bombay Banking Inquiry Report for the whole of Gujarat. Again the Banking Inquiries were undertaken in the years preceding the present severe depression, while our inquiry was conducted in 1933, i.e. in the middle of the depression. It would therefore seem probable that the percentage of the debt-free families must have been greater in pre-depression years in the taluka. These things make us to believe that from the point of view of indebtedness, conditions in our taluka were better than conditions in the Bombay Presidency as a whole and were more satisfactory than conditions in some of the other provinces of India.

DEBT PER HEAD

The debt per head in the taluka was Rs. 108/-.² This

¹ Quoted from the Punjab Peasant in Prosperity and Debt, by Darling, page 5. The Figures except of Borsad are based on the Provincial Banking Inquiry Committee Reports.

² This figure is calculated by dividing the total debt of the 288 families by the total number of persons in these families. This sum is representative of debts per head of agricultural persons in the taluka,

figure is higher than in other provinces, figures for which are given in the following table :—

No.	The name of the Provinces	Debt per head ¹ Rs.
1	The Punjab	57
2	United Provinces	25
3	Central Provinces	23
4	Bihar and Orissa	41
5	Burma	37
5	Bengal	20
7	Assam	24
5	North West Frontier	44
9	Marwar	44
10	Madras	32
11	Bombay	86
12	B O R S A D	108

As shown in the table above the debt per head in the Bombay Presidency as a whole and in other provinces is lower than in Borsad. This is in part due to the fact that the figures per head for the provinces given in the above table are calculated on the basis of the total population of each province. The greater part of non-agriculturists are usually free from debts. In our survey, we have excluded the non-agricultural classes as well as agricultural labourers (Dheds or untouchables) who form a great part of the population. Naturally the debt per head of the agriculturists in the taluka is as high as Rs. 108.²

DISTRIBUTION OF DEBT ACCORDING TO CASTE

The two hundred and eighty eight families which we have studied, represent the two main agricultural castes of the

¹ These figures are calculated by us by dividing the total debt of each Province by its total population as given in "The Punjab Peasant in Prosperity and Debt," by Darling.

² The Collector of Kaira stated in his evidence before the Bombay Banking Inquiry Committee 1930, "I have frequently made casual inquiries and find that the debt of from Rs. 150/- to Rs. 300/- a head is not uncommon among land owners." The Bombay Banking Inquiry Report, Volume III, page 429.

taluka, the Patidars and the Dharalas including the Rajputs. They are made up of 232 families in the villages of the first and second group and 56 families of the villages of the third group. Of the 232 families in the first and second group, 90 per cent. are of Patidars and all the 56 families in the third group are of Dharalas. The average debt per family in the first and second group was Rs. 998/- and that in the third group was Rs. 384/-. Thus an average Patidar family had more than double the debt of an average Dharala family. It would seem that among the agriculturists the higher the caste, the greater the indebtedness. The Dheds who are in the lowest rung of the social ladder had an average debt of about Rs. 100/- per family. The social status and the standard of life of the Patidar greatly increases his credit. The Dharala on the other hand is badly off and would have little credit unless he owns land. Again the religious sentiment prevailing amongst the Patidars that one's debt must be paid at any cost also explains why he gets more credit than a Dharala.

DEBT FOLLOWS CREDIT

In the above figures we can see the truth of the saying that 'Debt follows Credit'.¹ The greater the amount of land a cultivator owns, the greater his credit and the greater his debt. The Patidar being a landed proprietor has more credit and more debts than the Dharala who is a small proprietor of land or a tenant. A Patidar in Anklav having 54 Bighas of land is indebted to the extent of Rs. 14,000/-. Another landed proprietor owing 50 Bighas of land has a debt of Rs. 22,000/-. A Patidar landlord belonging to Saijpur having 150 Bighas of land is in debt to the tune of more than Rs. 25,000/-. No doubt their requirements for loans are greater, but where resources are sufficient these requirements are likely to be dictated more by wants than by necessities. Conversely the landless Dharalas inhabiting the

¹ "The indebtedness of the cultivators is a measure partly of their capacity, partly of their forefathers," Evidence before the Bombay Banking Provincial Inquiry Committee by the Collector of Kaira, Volume 3rd., page 430.

villages along the bank of the Mahi have been found starving for want of credit. The Dheds who have no land at all command little credit. Whatever little credit they may have, may be mostly attributed to their meekness and honesty.

These observations of ours are amply borne out by other testimonies offered by several rural investigators. For example, the Indian Famine Commission states, "It is commonly observed that land holders, are more indebted than tenants with occupancy rights and tenants *with* rights than tenants *at will*". Mr. Thourbourn found that the hopelessly involved were mostly among the smaller holders and that the larger debts were incurred by the larger owners. Similarly, in Faridpur, Major Jack found that nearly half the debt had been incurred by the cultivators in comfortable circumstances and that 48 per cent. of the poorest class had no debt at all.

PRODUCTIVE AND UNPRODUCTIVE DEBT

It is very difficult to discriminate between productive and unproductive debt. Mr. S. S. Nehru who studied this problem very minutely in some villages of the United Provinces believed in no such classification. He argued that an average peasant who lived from hand to mouth and who had no reserve for lean times did not incur any debt which may be termed 'avoidable debt'. The debts he incurred were all unavoidable in every sense of the term. He further argued that, "It is customary to class debts incurred on litigation, marriage and social functions or payment of interest as wholly unproductive. But such a view is a superficial view. The object of marriage is productive, and more than productive, re-productive. The object of social function is to guarantee the status and so conserve and raise the fellow's standard of living. The object of litigation is to safeguard the person and property, the life and holding of the agriculturist or his dependants. How can these objects, then, be considered as unproductive? They are obviously productive because they produce results; because those results are reasonable and justified; and because they subserve the best interest of the agriculturist himself, his hearth, and home,

his fields, and folks".¹ There is a certain amount of truth in Mr. Nehru's statement. For an individual, some expenditure on social functions is obligatory as expenditures on necessities of life. But sometimes the debts incurred are more for ostentation, vanity and pride than for the gratification of real needs of life. How can debts incurred for pompous ceremonies at death or marriage feasts be considered productive? Instances are not uncommon where such feasts were held by the mortgagee of the property, not of the owner's own accord but because he was pressed by the society. Again, if even these functions were useful, as marriage is indeed, they could be carried out more cheaply. Again, is expenditure of hundreds of rupees on the settlement of a trifling matter or possession of a very small piece of land productive? One would not have grumbled against such matters had the cultivator sufficient capital and resources. But we all know that he is too poor and that there could be no defence of extravagance on his part. It was impossible for us to ascertain what portion of a particular kind of debt was to meet a real social need; and what proportion was simply to satisfy the vanity of the spender. Therefore, we thought proper to distribute the debts between productive and unproductive according to the following rule. Any debt is productive which is meant to add to the wealth of the family. Debts incurred on land purchase, land improvement, sinking of wells, installation of pumps and education are usually productive, for the reason that beneficial results to the cultivator are likely to arise from them sooner or later. The debt incurred on religion, death or marriage feast, litigation and house building are unproductive as these are not likely to yield any material return. The distribution is necessarily rough, but it is sufficient for our purpose.

We discovered that a large part of the debt in the taluka was unproductive.² Only 35 per cent. of the total debt was productive. This will be seen from the following table. The

¹ Caste and Credit in Rural Area, by S. S. Nehru, I.C.S., page 103.

² "Admittedly the bulk of the debt in this province as elsewhere in India, has been incurred for unproductive purposes." The Bombay Banking Inquiry Report, Volume I. 1929-30, page 79.

table is based on the figures of debt obtained during our inquiry from different villages.¹

A TABLE SHOWING PRODUCTIVE AND UN-PRODUCTIVE DEBT IN THE TALUKA

1933-34

Kind of debt	Percentage of the total debt
A. PRODUCTIVE DEBT	
1. Sinking of wells and installation of pumps	10
2. Current agricultural expenses	9
3. Land purchase	6
4. Domestic expenditure	5
5. Trade and Business	4
6. Education	1
	<hr/>
	35

Kind of debt	Percentage of the total debt
B. UN-PRODUCTIVE DEBT:-	
1. Marriage	32
2. House Building	15
3. Death feast	9
4. Litigation	3
5. Religion	2
6. Unspecified debt	4
	<hr/>
Grand Total A and B	100

EXPLANATION

(i) *Sinking of Wells* :—As has already been stated, more than 10 lakhs of rupees have been invested in wells and pumps in the taluka during the last 20 years. But as a part of the money for investment was borrowed, we find that about 10 per cent. of the total indebtedness comes under this head. We have discussed this subject in Section B. Irrigation in the second chapter.

¹ Vide Appendix A. at the end of this Chapter.

(2) *Current Agricultural Expenses* :—This heading includes expenses on purchase of cattle, implements, manure, fencing, payment of land revenue and rent, cost of seeds and seasonal expenses on labour. If the current income of the farmer is not enough to meet the expenses, he incurs debt. Sometimes labour in agriculture is wasted due to natural calamities like the flood or frost or dearth of rain. A history of the last eight years reveals that each year was visited by some one or other of the above calamities. "Apart from the expenditure on ceremonials, bad seasons constitute the most important factor that compels the agriculturist to borrow".¹ Lastly, low prices of recent years have severely reduced incomes which do not suffer an adequate return on what was borrowed for agricultural purposes. Thus the debt due to this item amounted to 9 per cent. of the total debt.

(3) *Land Purchase* :—The value of land varies from plot to plot. The quality of land, the tenure of land, its suitability for different crops, its nearness to village, the density of population, the marketing facilities, the transport facilities and lastly the irrigation facilities are the chief factors that affect the price of agricultural land. Generally the prices determined by private negotiation are higher than by auction by the Government or the Court order; for people do not like to displease original holders by bidding at such auctions. Again as the Collector says, "the factors affecting value appear to be largely skill in cultivation",² and hence the most efficient cultivators would pay a higher price. Sometimes a rich man would buy land for ostentation and would pay a high price. The average price of the best kind of land in the taluka is about Rs. 400/- per Bigha. The land in the taluka is fertile and the high prices of the agricultural products during and after the war till 1926 encouraged cultivators to buy land. A number of people had even migrated to Mal in Kapadwanj taluka (of Kaira District) where large tracts of land were available at cheap prices. Unfortunately, they did not succeed as much as their fellow cultivators who purchased land

¹ The Bombay Banking Inquiry Report, 1929-30, Vol. I, page 47.

² Evidence Report of the Bombay Inquiry Committee, Vol. 3, page 428, Evidence by A. Master, the Collector of Kaira.

in the taluka itself. The latter would be earning decent returns now on their investments, had the slump in prices not occurred and continued for so long a time. We have 6 per cent. of the indebtedness credited to land purchase.

(4) *Domestic Expenditure* :—The debt on account of domestic requirements is the aggregated sum that an agriculturist borrows from a village Bania, in form of the purchase on credit of the primary necessities of life like clothes, sugar, spices, etc., "An ordinary cultivator needs financial accommodation to maintain himself and his family before the crops are harvested and sold".¹ The village showkar who wants his pound of flesh is always ready to sell him on credit charging him high prices and high rate of interest. Growing of commercial crops at the expense of food stuffs has made the farmer still more dependent on the village showkar. Some cunning Banias cheat the cultivators by making false entries, using wrong weights and wrong calculations.²

(5) *Trade and Business* :—The taluka peasant being enterprising and to some extent businesslike, some of the rich cultivators engage themselves in business and trade. They are mostly middlemen or merchants who send tobacco to Aden, Calcutta and elsewhere. A few of them run business in cotton, cotton seeds, grains and cloth. When prices were high, these businessmen made large profits. This encouraged the small cultivators to dabble in trade even with borrowed capital, but their ventures resulted in loss during the depression days. We have 4 per cent. of the debt due to this factor.

(6) *Education* :—Only a small percentage of the total debt (1 per cent. only) is incurred for education. Its smallness is due to the cultivator's aversion to meet the expenses of education of his children with borrowed money. It is rare to find an instance of a farmer educating his children by incurring debts. Only the rich send their children for higher education and when their means are limited or when they are

¹ Bombay Banking Inquiry Report, 1929-30, Vol. I, page 61.

² The most familiar instance of his wrong calculation is his murmuring 'two pice for salt and two pice worth of salt' thus charging an illiterate peasant four pice for salt worth half an anna only.

in pecuniary difficulties they would take away their boys from schools and colleges rather than incur debts to keep them there.

B. UN-PRODUCTIVE DEBT

(1) *Marriage* :—The debt on account of marriage is 32 per cent. the highest per cent. of the total debt. Marriage is the only auspicious occasion in the life of a cultivator when he forgets his differences, and enjoys social life fully and freely mixing with his brethren. It is by this occasion that his status is determined and his social prestige built ; the more he spends the more he receives popular applause. He spends beyond his capacity and would not hesitate to mortgage his property to secure large loans from the showkar. The ceremony is held with as much pomp as possible, and the expenditure amounts to thousands of rupees in case of a girl and hundreds of rupees for a boy. There is no limit to the expenditure as it all depends on the position of a cultivator. A rich cultivator has to give a good dowry to the bridegroom, furnish ornaments and entertain the party of the bridegroom for two days. Instances are not rare when a poor cultivator pays large sums to secure a bride for his son. In either case the dowry is rarely below a thousand rupees. It has been observed that a cultivator's saving (if he has any) is almost exhausted and has to approach the showkar to obtain the funds. He cannot postpone the ceremony till he saves the necessary sum from agriculture, partly because agriculture is not always paying and partly because he suffers disadvantages as his sons and daughters advance in age. People always find fault with a girl above 15 and a boy above 20. Hence he has to manage the ceremony always with borrowed funds.

(2) *House Building* :—Indebtedness on account of house building is the second heavy item in our table. The inflation of prices during 1914 to 1926 left a good margin of income in the hands of cultivators. A large addition to this income was made by profits earned in trade and by income from services outside the taluka. A many storied house seems to enhance the social status of a cultivator and gratify his

vanity. If he happens to have a certain sum of his own he would not hesitate to spend even double the amount by borrowing the excess. Generally, he does not estimate the cost of his new building and spends much beyond his capacity in imitation of his richer neighbours. A cultivator with a capital of Rs. 1200 once intended to raise a building. When the first story was nearly completed, he felt scarcity of money and was compelled to mortgage his two Bighas of land for Rs. 600/-. But even this was not sufficient and his vanity led him to mortgage the very building for Rs. 1000/- to complete the second storey. Only in a very few instances have houses been raised without incurring any debt. During the last 30 years houses in the taluka have improved in quality. Varsad which was an ordinary village 30 years ago has now the appearance of a small town with storeyed buildings one of which was erected at a cost of about Rs. 75,000/-. Similarly Sunav also attracts attention from a long distance on account of its high buildings. Of course, these houses are not necessarily in all cases an index of the true prosperity of their owners; some have strained their purses to be fashionable, others have built on borrowed money. The flood of 1927 caused many houses to collapse and many persons had to incur debts for their repair and reconstruction.¹ All these factors have contributed to a large increase in indebtedness for house building which now accounts for 15 per cent. of the total debt.

(3) *Death-Feast* :—It is said that even death is costly in India and we find that this statement is true of our taluka. It is the custom for a family to observe a death-feast after the death of any of its members. Though it is voluntary, it is as binding as any law of the country. If one has no money he should borrow from a showkar, but must not refrain from observing the feast. Its non-observance lowers his social prestige and exposes him to the taunts of his fellowmen. An

¹ During the flood of 1927, out of 37,896 houses in the taluka 7,120 had totally collapsed and 18,460 were damaged which needed immediate repairs. The Gujarat Prantik Samiti, distributed freely Rs. 24,378 and advanced as loan Rs. 62,979 to 7000 people in the taluka. Gujarat Prantik Samiti Report, 1927-28, page 78-79.

No.	Cause of litigation	Expense	Time spent on litigation
14	Suit to restrain the defendant to cut the branches of his mango tree overhanging the plaintiff's field.	15 8 0	2 months
15	Criminal prosecution for assault made at the time of settling the boundaries of the field.	31 8 0	2 months
16	Obstructing the right of taking out water through the neighbour's field and thus damaging the crops of the plaintiff.	5 4 0	3 months
17	Suit for encroachment of a foot of land near the house.	50 0 0	10 months
18	Suit for obstruction to a water-course running through a defendant's house	90 14 0	1 year

(5) *Religion* :—The religious debt amounts to 2 per cent. of the total. The taluka peasant is religious. He spends money to satiate supernatural powers for the health of his new born baby, invariably if it is a male child. He believes that the diseases from which he and his children are suffering are due to the wrath of local deities such as God of Small-pox, the goddess of Cholera etc., and he spends more to satisfy them than on medicines. On his return from an All-India pilgrimage, he performs Ganga Puja or the worship of the Ganges water and gives a caste dinner and distributes brass utensils to commemorate the occasion. Cocoanuts worth thousands of rupees are imported into the taluka every year for religious offerings.

(6) *Unspecified Debt* :—An average cultivator is generally not aware of the full allocation of his total debt, and the debts for which we could not trace the causes are classified as 'unspecified debt'. Such debts amount to 4 per cent. of the total.

SOURCES OF CREDIT

There are six main sources from which the cultivator borrows money. They are as follows :—

- (1) The Shroff.
- (2) The village showkar.
- (3) The rich cultivator.
- (4) The Government.
- (5) The Co-operative Society.
- (6) The Pathan.

(1) *The Shroff* :—The shroffs reside in the town of Borsad and are four in number. They are accustomed to receive deposits from cultivators and widows and pay an interest of 3 per cent. As there are no facilities for investment of savings except a few postal saving banks (17 only), and 28 Co-operative Societies (in which people have no confidence) the people are naturally drawn to them to deposit their balances. The money is lent out to village showkars, landlords and rich cultivators at a rate of $7\frac{1}{2}$ per cent. Thus they receive as their profit the margin between the rates of interest on deposits and on loans. They also invest any surplus fund in speculative purchases of gold and silver. It was contended by Mr. C. M. Pandya, the District Honorary Organiser of the Co-operative Movement in the taluka, and the District, in his evidence before the Bombay Banking Inquiry Committee that "Their resources are crippled because nowadays they do not receive the same amount of deposits from their people because of better rate of interest secured elsewhere"¹ He thought that the deposits which they used to receive from the middle classes are now diverted to postal cash certificates as they offer higher rates of interest. But Mr. Pandya's statements are not borne out by the facts discovered by us in the course of our inquiry. The people in general are too illiterate as yet to have large dealings with the post office. Secondly, unlike the investment in the postal certificates, the deposits with the shroff can often be withdrawn easily on demand. Thirdly, the shroffs themselves have asked their old depositors to withdraw their money and

had restricted accepting new deposits for the reason that they could not invest them profitably during these days of depression. The truth is that shroffs are considered by the people as the most trustworthy bankers and they have retained their confidence even in bad times when other showkars have failed.

(2) *The Village Showkar* :—The village showkar is the principal money-lender who provides a large part of the financial needs of the taluka. There is not a single village where he is not to be found. He gives credit both in kind and cash at different rates of interest in different ways which shall be described in the following pages. He acts as middleman for the sale and purchase of the agriculturist's products. He is also a shopkeeper and sells cloth, spices and other needs of life. Under existing circumstances he renders useful service to the peasant in both these capacities.

(3) *The Rich Cultivator* :—The financial needs of the peasants are so urgent and so great a source of earning profit, that gradually, during the last 20 years the rich cultivators and landed proprietors have taken to financing the smaller peasants. They are generally Patidars. They are neither middlemen except in tobacco business, nor are they shopkeepers. They lend to those whom they know personally.

(4) *The Government* :—The Government lends money (known as *Taccavi*) only during exceptionally bad years when the harvest fails and the peasants are not able to pay even their land revenue. Generally the Government has a sympathetic attitude in giving *Taccavi* loans to the peasants; but as the Collector himself complains, the village officers have not been found sufficiently interested in the matter. So the *Taccavi* loan forms only a small part of the total borrowings of the cultivator. In his evidence before the Bombay Banking Inquiry Committee, 1928-29, the Collector said, "Last year I found that Talatis and village officers were often very obstructive in the matter of *taccavi* loans, refusing to forward petitions unless given a fee. The attitude of the Government is that *taccavi* will be given if required, but no effort is made to see that all those who need *taccavi* and have security, actually receive it. The district officers have many duties

and do not encourage the cultivators to take taccavi or even inquire whether they need it. They have every motive not to increase their work, in view of the many compulsory duties, which are required from them".¹

These loans are generally inelastic and the Government enforces repayment by stringent methods. Often the cattle and moveable property of the borrower are attached for default in payment of his instalments. So people do not like to approach the Government for help.

(5) *The Co-operative Society* :—The Co-operative Society finances only its members for productive purposes. The subject of Co-operation is dealt with more fully in the next chapter.

(6) *The Pathan* :—The Pathan lends money only to inferior castes like the Bhangis and the Dheds, who have no sources to offer as securities against their debts. The Pathan usually charges one to two annas a rupee a month which amounts to a rate of 75 per cent. to 150 per cent. per annum and recovers the amount by the power of his hand. Such loans, however, are few in the taluka.

Securities for Debt :—The money is lent to a peasant against security of (1) personal character, (2) gold and silver ornaments, (3) cattle or house or land, (4) share in wells and (5) on the guarantee of friends. The credit of a person depends on his status and character he enjoys in his society. A person who is known to be honest and capable can borrow at cheap rates without any tangible security. But this is not very common. In most cases some tangible security of one or other variety has to be given against loans and the amount of money lent is usually half the total value of the property mortgaged. However, the properties mortgaged during the inflation of prices have greatly fallen in value relatively to the nominal value of the mortgaged debts. So the creditors are now slow to advance money even on mortgage. The case of a peasant in Anklav, who had mortgaged his field of three Bighas with possession for a sum of Rs. 1400/- six years back is an instance to the point. He could not repay

¹ Vol. III, page 428

the borrowed money and the rent which amounted to Rs. 300/- within the stipulated time, and therefore, had to execute a new deed of mortgage for Rs. 1700/- which is greater than the present selling price of the piece of land mortgaged.

TERMS OF REPAYMENT

There are various methods of repayment of loans prevalent in the taluka. If the borrower cannot repay in cash he sometimes repays in kind by transferring his grain, cattle, and other forms of property. Sometimes he undertakes to render personal services to the lender which are valued at a certain rate. This is the case when the borrower is an untouchable and when only a small loan is involved. In certain cases again a personal loan which cannot be repaid is replaced by mortgage on property.

The loan is repaid by *Khandha* system also. It obtains among the poorer classes. In it, out of a loan of Rs. 100/- only Rs. 90/- are paid in cash to the borrower and a pro-note of 'Rs. 100/- is taken from him. Thus Rs. 10/- is charged at the time when the loan is contracted. Then the borrower is required to repay the whole amount in 10 monthly instalments of Rs. 10/- each. In default of payment of any instalment he is charged interest as fixed in the pro-note. The interest charged in this system amounts to about 40 per cent. per annum.

RATE OF INTEREST

Shroffs in the taluka lend at 6 per cent. to landlords and village showkars. Their rate of interest is usually lower as they are more confident of the safety of their money. The Co-operative Society charges rates between 10 and 11 per cent. The Government charges 9 per cent. on taccavi advanced to cultivators against their assets. It is the Showkar and the rich cultivator who charge different rates of interest to different kinds of cultivators. They charge 9 to 12 per cent. to rich cultivators and 12 to 25 per cent. to the poorer people. In the *Khandha* system they receive interest of about 40 per cent. The Pathan lends only to Bhangis and Dheds at a rate

of one or two annas a rupee a month or about 75 to 150 per cent. rate of interest. But loans of such nature are rare in the taluka.

ABUSES IN MONEY LENDING

To an average villager, the village showkar is the only banker who is easily accessible. Whereas the Government and the Co-operative Society are rigid in enforcing their rules both at the time of lending and collecting the loans, the showkar's terms are elastic. The former, again, lend for productive purposes while the latter makes no such distinction. The showkar is ever ready to welcome the peasant and sometimes offers all sorts of inducements to borrow from him. The ignorant peasant falls an easy prey to his wiles and is squeezed hard. "Honest money-lenders are really praiseworthy, for it is to their credit that they have helped the farmers in times of difficulties, but there are veritable Shylocks who live by sucking the poor peasant's blood, and their insatiable greed ends in killing the goose that lays for them the golden eggs".¹ It would not be out of place to mention a few of the methods resorted to by the showkar.

(1) While opening a new account, the showkar adds interest on the sum lent from the beginning. So at the end of the year, when accounts are made up, the interest is charged on the interest itself.

(2) While lending money, the showkar makes the peasant promise that his crops will be sold to him and that he should buy his needs of life from his shop. The peasant is thus made to buy in the dearest market and sell in the cheapest. We noticed, especially in the villages of the third group, that the poorer and ignorant Kolis and Dharalas hand over to the showkar almost all the produce of the fields immediately after harvest, keeping for himself only a scanty supply of grain sufficient to last a month or two. The produce sold is valued at 25 per cent. below the current market rate. In 90 per cent. of the cases the credit is utilised in repayment of old debts. Again when he buys his needs of life, he is charged 25 per cent. higher prices than the prevailing market

¹ *The Farmer and His Debt*, by Anwar Iqbal Qureshi, M.A., page 26.

rate and when the accounts are settled a substantial sum by way of interest is added and a fresh *Khata* or pro-note is drawn up for the whole amount.

(3) Generally the showkar reminds the peasant of his old debts a month or two before the harvesting season and pesters him in such a way that the latter is obliged to sell to him his standing crops. The price allowed for the crop is 25 per cent. lower than the price which the peasant could have realised, had the showkar shown a little forbearance and postponed recovery of his debts two or three months only. If the peasant does not easily accede to the wish of the showkar, the latter threatens to resort to the court.

(4) In the villages situated on the Mahi, peasants often need corn in the beginning of monsoon. They borrow on condition of returning at Divali (when the kharif crop is ready) one and a quarter times the amount taken. If they fail to repay, they are charged an extra quarter of the principal and the interest due, at Holi (4 months later). Thus the debt due increases at compound interest of 25 per cent., at stated intervals of 4 months.

(5) In very small villages and hamlets where showkars are not easily available, a peasant in need of money goes to the showkar in the neighbouring village, and obtains money on mortgage on which interest varies from 20 to 25 per cent. As this interest is not allowed by Courts under the Deccan Agriculturist Act of 1879, the showkar, in order to evade the Law, gets mentioned in the document an amount larger than the sum actually advanced and nominally charge a lower rate of interest. It often happens that instead of a mortgage deed, the showkar takes a sale document of the borrower's property under benami contracting orally that at the end of a fixed period, the borrower could redeem it on payment of the money advanced.

(6) The showkar would often flatter the vanity of the poor peasant and would induce him to spend beyond his capacity in order to bring him in his clutches.¹ He would evince his

¹ "The heavy rural indebtedness in India is due largely to the fact that money lenders find it a profitable investment and are not only prepared but

readiness to advance the necessary money on festive occasions and would not insist on its immediate payment until it swells into a large sum. Then he will make an immediate demand for money or ask for a sale or mortgage of his property. Thus the showkar would gradually dispossess him of his property.

CRITICISM AND SUGGESTIONS

It will be observed from the preceding pages that the peasant's indebtedness has been mainly due to his need of money for social and agricultural purposes. The cultivator obtains the necessary credit from the showkar and other money lending agencies. It is already observed that the agencies other than the showkar are not accommodating and easily accessible. It is the showkar alone who undertakes the heavy task of financing the rural areas and sticks to his position by foul or fair means. In spite of the fact that he takes undue advantage of his debtor, we cannot ignore his services to the taluka peasants. He never questions the purpose for which loan is taken, whether productive or unproductive nor is he too insistent for repayment. He extends even fresh loans to his debtors and revives in them the energy to do work. It is this that has made the peasant to stick to him despite his high rates of interest and other malpractices which have fettered the peasant permanently to him.¹

Several schemes have been suggested for the redemption of the indebtedness of the peasant. "The greatest hope of the salvation of the rural classes from their crushing burden of debts, rests in the growth of a healthy and well-organised Co-operative Movement based on careful education and systematic training of the villagers themselves".² We have

eager to lend money with all possible persuasions and temptations which the simple farmer cannot resist." *The Farmer and His Debt*, by A. I. Qureshi M. A., page 31.

¹ The Report of the Bombay Banking Inquiry Committee, 1928-29 Vol. II, page 53 observes "It is the high rate of interest and the malpractices that are followed by the money-lenders that tend to perpetuate his state of indebtedness.

² Report of the Royal Commission on Agriculture, 1927.

already expressed our faith in the Co-operative Movement (in chapter 9) as an ideal measure for the uplift of the masses. But we think that before the movement captures the field of rural credit and displaces the village showkar there shall elapse many years during which the peasant cannot do without the help of the showkar. Hence efforts should be made at least to see that the cultivator is not deceived by him. Spread of education and a little knowledge of book-keeping on the part of a cultivator would help a great deal. If cultivators exercise a little intelligence to check the accounts of the showkar and take the help of the existing law—the Decan Agriculturist Act of 1879—their debts would not rise by leaps and bounds as they are doing to-day. Though the Act is considered as the worst piece of legislation, which has created hostility between the agriculturist and the showkar and has instigated the money-lenders to adopt foul practices in preparing records and maintaining accounts, we think that the Act as such is intended for the benefit of the cultivator and should be taken advantage of so long it is not replaced by a better one. These methods will keep the development of debts within limits.

As for the redemption of old debts, we suggest, firstly, that the Rural Solvency Act should be made known to the agriculturists and that its use should be encouraged wherever possible. This would relieve the families which are desperately indebted. The existence of heavy load of debt handicaps the debtor throughout his life. Secondly a Land Mortgage Bank should be established in the taluka. Fortunately, the taluka is to have one such Bank within a short time, which would advance loans at $6\frac{1}{2}$ per cent. for long terms (20 years) for the redemption of old debts. The debts of the cultivator will be examined by an arbitration board and will be reduced to a reasonable level. If the showkar or the creditor agrees to the decision, the amount will be paid to him by the bank, and the peasant will be a debtor of the Bank instead of the showkar. This amount will be repaid within 20 years by instalments. Thirdly, due to the shortage of fund and protest of money-lenders, the Bank could not solve the problems of indebtedness, as at least

during the initial stages. The State should therefore compel the creditors to abide by the decision of a "Conciliator Board" appointed by Law to reduce the debts to a reasonable limit after scrutinising the accounts. Acts of a similar nature have already been passed in U. P., the Punjab and Bengal. Much opposition should be expected from the vested interests in the event of such a legislation. But if rural interests are to be preserved, drastic measures are necessary. A contented and happy peasantry is the backbone of the nation and every effort should be made to relieve him of his troubles.¹ It was this consideration that impelled the Governor of U. P. to certify the usury bill of the province.

Measures of the type which has been adopted in Bhavnagar State where debts of the peasants have been taken over by the State itself, are also worth consideration. Peasants in Bhavnagar State were indebted to an extent of Rs. 86,38,879 and paid an yearly interest of Rs. 21 lakhs to the showkars. Besides, they owed Rs. 40 lakhs to the Government as arrears of land revenue. After a proper inquiry into the matter, the State wrote off 33 lakhs of land revenue and reduced the debt of Showkars to Rs. 21 lakhs only or about 75 per cent. of the total. Sir P. Pattani had a living faith in the welfare of his subjects and was not deterred even by pessimistic arguments that peasants would return to their old extravagance and the State would again be confronted with the same problem. Fourthly, we think that in the taluka where 57 per cent. of the peasants have income below the bare sustenance level, no scheme for the redemption of debt would succeed unless it is supplemented by a scheme to increase the wealth and income of the people. This scheme should include all aspects of agriculture as an occupation and a way of life. It includes also a propaganda to persuade the peasant to reduce his unproductive expenses and to form habits of thrift and savings. Enough has been

¹ It is worth remembering here the famous couplet of Goldsmith,
 "Princes and Lords may flourish or may fade,
 A word can mar them as a word hath made them;
 But a bold peasantry their country's pride,
 When once destroyed, can never be supplied."

said on these points at proper places in this study. The Bombay Banking Inquiry Committee, 1928-29 observes, "Our examination of the problem of debt leads us to conclude that its incidence would not be so onerous and its growth not so serious, were the margin between income and expenditure higher than what it is to-day.....even if the incidence of interest is reduced considerably, the success of any scheme for liquidation of debt would be problematical, should the agricultural conditions remain as they are now".¹ If the wealth of the cultivator increases by improvements in agriculture, his repaying capacity increases. Wholesale redemption of debts without such efforts would be of little avail.

APPENDIX A.

The following table gives the extent of indebtedness (classified under different heads) of 152 families in the 1st group, 80 families in the 2nd group and 56 families in the 3rd group in the taluka.

(The figures are given in hundreds)

KIND OF DEBT

A	Productive debt	Group	Group	Group
		I	II	III
(1)	Sinking of wells etc.,	Rs.	Rs.	Rs.
(2)	Current Agricultural expenses	164	71	4
(3)	Land purchase	119	65	37
(4)	Domestic expenditure	117	31	14
(5)	Trade and Business	54	66	15
(6)	Education	57	55	—
		11	10	—

B	Unproductive debt	Group	Group	Group
		I	II	III
(1)	Marriage	480	257	81
(2)	House building	192	164	10
(3)	Death feast	126	76	31
(4)	Litigation	42	28	6
(5)	Religion	18	18	5
(6)	Unspecified debt	54	41	12
	Total	1484	882	215

CHAPTER IX

CO-OPERATIVE MOVEMENT

INTRODUCTION

One of the important agencies started to tackle the problem of rural credit and rural indebtedness is the Co-operative Society, which encourages thrift, economy and education among the people. It teaches the cultivator to discriminate between productive and unproductive expenses and attempts to reduce the latter. It brings each cultivator into closest contact with other cultivators and encourages mutual help and responsibility for one another's conduct. Thus the moral standard of the peasant is raised.

IMPORTANCE OF THE MOVEMENT

Though the Movement was started specially to supply credit, its scope was extended to include almost every distinct want of the common life of the farmers. It has proved a great economic power all over the world. It has benefited many countries. In Germany, U. S. A., Great Britain, France, Belgium, Denmark, Switzerland, Italy and other countries there are at present innumerable Societies formed for a variety of purposes like buying, selling, storing grain, improving livestock, insuring farmer's property against every sort of risk and last but not the least, supplying credit on short and long terms for current agricultural operations and permanent improvements. In Switzerland it supplies agricultural and domestic requisites and has enabled farmers to dispose of their young beasts as pedigree stock at five times the price that they used to fetch.¹ German peasantry benefited largely from this Movement during the last 50 years. The proverbial prosperity of the peasants of Denmark and Holland depends on the success of Co-operation among them. In U. S. A., France, Italy and other countries the Movement is receiving encouragement. In brief, rural areas in western countries in

¹ Co-operation in Agriculture, by H. W. Wolff, page 2.

which agricultural co-operation has been introduced have reaped high gains. The agricultural classes and the whole country have grown richer.

INTRODUCTION OF THE MOVEMENT

The Movement was inaugurated in India by the Co-operative Credit Societies Act of 1904. Up to 1912, it was deliberately confined to the field of credit supply only. The Movement was largely the outcome of the anxiety of the Government to ameliorate the miserable conditions of the peasant and specially to reduce his heavy burden of indebtedness. Since the Government has borne the cost of the Movement it has reserved certain powers to itself, e.g. compulsory inspection, audit, dissolution, etc. The main results of the Movement in the words of the Royal Commission on Agriculture, 1927, "may be said to be the provision of a large amount of capital at reasonable rates of interest and the organisation of a system of rural credit which carefully fostered may yet relieve the cultivators of that burden which he has borne so patiently throughout the ages. Knowledge of Co-operative system is being encouraged; training in the handling of money and in elementary banking practice is being given. Where the Co-operative Movement is strongly established, there has been a general lowering of the rate of interest charged by money-lenders; the hold of the money-lender has been loosened with the result that a marked change has been brought about in the outlook of the people".¹

An attempt to introduce Co-operative Movement in the taluka was first made in 1915 when the first Co-operative Society was started at Bochasan. Five more Societies were formed at Dedarda, Vadeli, Dabhasi, Napa and Vehra in 1919. From that year the number of Societies began to increase and reached 14 by the end of 1924. All these Societies were independent organisations and were guided and financed by the Provincial Co-operative Bank at Bombay up to 1924. As these Societies increased in number it was

¹ Page 447.

thought desirable that the village Societies should enter into federation and be supervised by a central body in the taluka itself. Accordingly in 1925, the Borsad Taluka Supervising Union, Ltd., was established.

It is the Registrar of the Co-operative Society, Bombay Presidency, who allows the formation of a village Society when he receives an application of 12 members from the village through the Borsad Supervising Union. Any person who holds property (land or house) can become a member of his village Society by paying a rupee as membership fee. The members elect from among themselves a President, a Secretary and a managing committee of not less than 5 and not more than 7 members. It is the Secretary alone who is paid for his labours. The Society receives deposit from members as well as non-members at the rate of 6 per cent. Its accounts are audited once a year by the auditor appointed by the Registrar of the Co-operative Societies, Bombay Presidency, and four times a year by the supervisor of the Borsad Union. It lends money to its members only for short term agricultural productive purposes like the purchase of cattle, implements, manure, for digging wells and for installation of pumps. When a member requires money he requests his village Society for loan and submits the details of his requirements with the application. The secretary of the Society makes a credit statement of assets and liabilities of the applicant. He then forwards the application to the Borsad Union. If the Union is not satisfied with the nature of the case, the supervisor of the union goes to the spot and undertakes a personal inquiry. If the application is passed, it is sent to the District Co-operative Bank, Nadiad, which gives money according to its wishes and convenience. Generally, loan is given to those who offer securities of their property and two referees who must be the members of the Society. The borrower has to take two shares of the Bank at Nadiad, of Rs. 25/- each for every loan of Rs. 1000/-. He has to deposit also 10 per cent. of the amount of his loan in his village Society. He pays interest at the rate of 10 per cent. and repays the debt within one year.

In 1933-34 there were 28 village Societies in 27 of its

A table showing the financial conditions
of the various Co-operative Societies in the Villages of the Taluka in 1933-34¹

No.	Village	No. of members	Deposit of the members	Deposit of the non-members	Due Money	Rate in cur-	Loans advanced	Interest per Re.	Interest per Re.	Loans returned	Working Capital	Reserve fund	
1	2	3	4	5	6	7	8	9	10	11	12	Rs.	
1	Davol	106	2729	1072	3701	804	1½	414	1193	4111	312		
2	Malu	51	588	300	1111	650	1¼	58	145	1573	430		
3	Khanpur	66	567	—	1554	—	"	600	496	1726	90		
4	Virol	49	635	—	2604	—	"	704	161	2915	516		
5	Khatnal	55	1368	—	2017	50	"	269	337	2733	872		
6	Anklav (east)	127	2166	—	7369	—	"	695	162	14192	617		
7	Armod	102	885	—	2053	—	"	290	122	3035	231		
8	Rhedasa	91	1093	—	3538	—	"	550	190	3753	607		
9	Anklav (west)	115	1158	3180	4522	1773	"	446	769	6860	587		
10	Alarsa	115	834	—	1668	—	"	315	207	3118	469		
11	Kathol	19	391	14	1659	14	"	101	60	2326	206		
12	Kathana	74	598	20	2523	12	"	242	265	3367	275		
13	Badalpur	112	1094	34	4252	20	"	614	407	4770	966		
14	Pandoli	95	838	—	804	—	"	1½	20	—	1294	—	
15	Pamol	119	3891	—	13852	—	"	1½	1160	707	15666	700	
16	Dadarda	142	1839	26	3648	21	"	416	126	4497	1035		

117	inglav	95	752	675	3591	40	$1\frac{1}{4}$	814	$4\frac{1}{2}$	4292	292
118	Iathipura	98	1789	—	3434	—	"	362	$2\frac{1}{4}$	3973	915
119	adelhi	95	1368	—	4371	202	"	1405	1844	4909	993
120	abdhasi	103	903	—	2846	—	"	470	127	3701	199
121	zodhal	46	—	409	1112	415	"	103	512	1629	185
122	zochasan	355	1778	1031	6738	—	"	257	445	7426	2700
123	Japa (Talped)	189	1381	1713	6551	230	"	845	1363	7209	459
124	ajipur	122	726	—	5037	—	"	184	1168	5835	356
125	borsad	130	1705	155	2078	310	$1\frac{1}{2}$	232	620	2377	518
126	Jisaraya	76	1194	—	2827	—	$1\frac{1}{4}$	197	140	4138	188
127	rehra	141	1922	—	4576	25	"	732	349	5418	709
128	Kantharia	36	420	—	1084	—	"	98	70	1654	124
	Total	2934	34560	8629	100925	4566				12593	128497

These figures are taken from the annual report of the Borsad Co-operative Union, 1933-34

villages with a total working capital of Rs. 1,37,483, reserve fund of Rs. 15,551 and 2,934 members. Rs. 34,560 and Rs. 8,629 were invested by the members and non-members respectively. The table on pages 260 and 261 shows the financial condition of the village Co-operative Societies in the taluka.

The Supervising Union at Borsad, established in 1925, supervises, controls, and guides the village Societies in their activities. It receives a fixed quota of income per year from these Societies in lieu of its services to them. It receives a grant from the Provincial Co-operative Bank, Bombay, and also from the District Co-operative Bank, Nadiad, to the extent of about Rs. 800/- a year for its maintenance. The Supervisor of the Union helps the secretaries of the village Societies to collect due arrears.

WORKING OF THE VILLAGE SOCIETIES

It may be observed from the appended table, that there were 28 Societies in 1933-34, of which 14 were in 13 villages of the first group, 7 in 7 villages of the second group and the remaining in 7 villages of the third group. The number of members in these Societies was 2,934. If each member represented a family of six persons, the Movement affected 17,604 persons or about 12 per cent. of the total population in the taluka. An average reserve fund per Society was Rs. 555/- and the working capital was Rs. 4,589/-. The average deposit per member was Rs. 11/- only as against the average arrears Rs. 34/- or about three times one's deposit. The deposit of non-members amounted to Rs. 8,629/- which was a very small amount. It is indicated that the movement had not secured the confidence of the richer classes in the taluka. Only Rs. 4,566/- had been lent during the year which was an insignificant part of the agricultural needs of the taluka which is estimated at about 20 lakhs of rupees a year. Interest on the arrears was fully realised while payment on the arrears formed only one-eighth part of the total. There still remained to be collected a large amount from the members. Fortunately the taluka has an able official in Mr. Vakta, the Supervisor of the Union, who

takes great troubles to collect arrears. It is his labour that has kept alive the Movement in the taluka, during these hard times. The rate of interest allowed on the deposits was 6 per cent. while that charged on loans was between 10 and 12 per cent. During a period when the Bank rate was 3 per cent. these rates were decidedly very high. Even the showkars lend at this rate.

CAUSES OF SLOW PROGRESS OF THE MOVEMENT

The facts stated above bear testimony to the slow progress of the Movement in the taluka during the last 20 years. The reason is that it has been imposed on the people from above and they have not grasped even ABC of its principles. At the root of the slow progress is the illiteracy of the masses. Secondly, it is not a well organised Movement which has enlisted the wise and prudent heads of the village. It consists of members who are desperately indebted and seek relief from it. They do not take sufficient interest in the working of the Society. Increase in the number of Societies and in their membership has not always been accompanied by improvement in quality. The members themselves are not aware of Co-operative principles and the staff seems to be inefficient to guide the Movement properly. Some members have exploited the Co-operative Societies for their own benefits. They have induced the cultivators to take loans from the Societies for some one or the other productive purpose and when the loan has been sanctioned, they have demanded them to hand over the sums in repayment of their old debts. Thus a showkar had his own loan of Rs. 4,000/- to two Patidars, two Musalmans, three Dharalas and two Dheds repaid in this manner. Again a Garasia who had already taken Rs. 6,000/- from the Society for the installation of a pump was refused further loans. He then induced some friends of his to borrow Rs. 4,000 from the Society in their own names and to transfer the sums to him. One cannot expect any progress from such a body of members who are either ignorant or interested in their selfish motives. Thirdly the village Societies as well as the Supervising Union at Borsad, seem to be careless in sanctioning loans. They

sanction all applications for loans that are received by them.¹ They have acted almost as a post office in forwarding each and every application to the District Co-operative Bank, Nadiad. Every application for assistance should surely be critically examined before it is sent to the Bank of Nadiad. The Societies and the Union have an advantage in that they are in closest contact with the applicants. The Bank at Nadiad on the other hand knows little of the position of the applicants. Due to the lack of careful supervision many abuses have crept into the working of the Societies. Though new loans had been cut down to very small proportions and the collections of old loans fairly heavy, yet the members still owed Rs. 1,00,925/- to the Societies which had 130 decrees involving Rs. 19,837/- for payments passed by the Law Courts, pending against their members at the end of 1934. The words of the Royal Commission on Agriculture in India, 1927 are equally true of this taluka. "The members of Societies delay the repayment of loans even when able to repay; understanding of the principles of co-operation and knowledge of the essentials of rural credit are lacking; office holders refrain from taking action against defaulters and the spirit of self-help is not as prominent as it should be, if the Movement is to be a live force in village life".² Fourthly, though money is given for productive purposes, the Societies and the Union do not see whether the amount lent is used for the items for which it was demanded. It is spent in bad

¹ The following table illustrates the point:

Name of the Village Society	Loan sanctioned by:		
	I Village Society	II The Union	III The Bank
Khatnal	660	660	196
Kathana	715	715	95
Badalpur	600	600	80
Khedasa	1000	1000	25
Alarsa	1000	1000	75
Hathipura	1600	1600	379
Malu	735	735	100
Total	<u>6310</u>	<u>6310</u>	<u>950</u>

² Page 449.

years firstly for the purchase of food stuffs, secondly, for the payment of rent and land revenue, thirdly, for the repayment of old debts and only lastly, for the financing of agricultural needs. An experiment made in the United Provinces to supply seed itself instead of loans for the purchase of seed led to the anomalous and incongruous situation that many would be loanees who came great distances in search ostensibly of loans, refused to receive them when they were offered in seed and not in money and on terms far cheaper than the village Banias charged them. This state of things could equally arise in this taluka. Fifthly, the Societies are mainly credit supplying agencies only for short term agricultural needs of the peasants. "One of the chief reasons why Co-operative Societies in India have mostly failed to reduce rural indebtedness is that they cannot cater for uneconomic borrowings by the farmers, and the money-lender has got a free field to entrap the farmer and once a farmer falls into his clutches, it is not easy to get out of them".¹ Sixthly, the rate of interest is very high—between 10 to 12 per cent. and people are not able to liquidate their loans as early as they should. Seventhly, the constituent Societies in the villages pay about Rs. 700/- per year to the Union at Borsad. But this sum together with grants from the Provincial Co-operative Bank, Bombay and the Bank at Nadiad amounting in all to Rs. 760/- are spent on the salaries of officers and expenses of the Union Office. People connected with the rural Societies know that no helpful propaganda ever reaches them. Naturally some of the rural Societies grumble against the levy of such an unproductive tax.

SUGGESTIONS

i. *General* :—The slow progress of the Movement in the taluka should not discourage anybody. If the peasants are to reap economic, social and moral benefits from it, it should again be placed on a sound basis. It cannot succeed among illiterate people. We should suggest, therefore, that the first step in the development of the Movement should be the

¹ Farmer and His Debt, by Anwer Iqbal Qureshi, M. A., page 31.

spread of general education in the countryside. Secondly, although the Movement professes lofty aims, it does not appeal to a simple peasant if it does not offer material benefits to him. Hence it should be made self-reliant and independent of outside help. Fourthly, it should build character and encourage thrift and self-reliance among the masses by inducing them to deposit their savings in the village Societies.

II. *Village Societies* :—The village Societies should only be started when there is a demand from the people. Prior to this, propaganda for the Movement is essential and various devices should be introduced to capture the imagination of the cultivator to realise the importance of the Movement. The benefits of the Societies should be made known to the people. This would create a demand for the institution from the people who will take greater interest in the working of their Societies. Secondly, the members should be selected with great care and emphasis should be laid on their moral character. In Credit Societies, liabilities being unlimited, success depends upon the moral character of the members. The members should be faithful to their Society and should realise that the interest of their Society is their own interest. Non-members should not be treated equally with the members of the Society in their dealings. Thirdly, it should be of the unlimited liability type. Every member must have an equal vote and equal voice in the affairs of the Society. The officers of the Society should be selected from the members according to their capacity. Fourthly, the Society should begin its work with little and little business and should expand and multiply its services only as transactions increase and its financial strength develops. A Supply Society becoming also a Sale Society is the simplest form of such multiplication of services. Fifthly, the Society should not enter into risky or speculative business. Sixthly, its accounts should be kept carefully. They should be simple and intelligible even to an ordinary farmer. They should be audited by auditors appointed by the Supervising Union of the Taluka. The system of auditing by Government officers which obtain at present has not been successful. A skilled

auditor appointed by the Union, is sure not only to possess the requisite technical knowledge, but also a direct interest in making his inquiry searching and going beyond the mere figures and comparison of the entries with vouchers.

The village Societies should enter into federation under the Supervising Union to secure the advantages of large scale organisations. This central body of the Union, should engage experts to advise and guide peasants in recent improvements in agriculture. If agriculture in the taluka is to develop, it must keep contact with the progress of agricultural science. It is the experts who can well know what particular fertiliser or feeding constituent is most suitable to a particular farmer's field or cattle. In this manner, for example, Control Societies in Sweden have taught farmers to improve their output and save money by replacing inferior with superior feeding stuff.¹

III. Different forms of Co-operation :—The present Movement is a limited one, touching only the problem of credit supply to the peasants. There are other forms of Co-operation which we have suggested in brief in the following pages and which ought to be in the taluka sooner or later if Co-operation is really to serve the agriculturists with all its noble aims. One of the chief aims of Co-operation in India is to displace the village showkar from rural economy and this aim would be secured only when Co-operation develops in all its forms and caters to all aspects of the cultivator's life.

A. Credit Societies :—In an agricultural tract like the taluka, farming operations cannot be carried on efficiently unless the farmer receives adequate credit at reasonable rates. At present his requisites are met largely by the village showkar, but at rates which are frequently exorbitant. Endeavours have been made to supply the credit needs of the farmer through village Societies known as Co-operative Credit Village Societies. But as we have already seen, these Societies have not been very successful in the taluka. How-

¹ The expenditure has been reduced in terms of Swedish feeding units from 155 to 135 lbs. Co-operation in Agriculture, by H. W. Wolff, page 334.

ever, there is little ground for pessimism. The Credit Societies can be and should be re-organised on proper lines, if the simple principles of Co-operation are attended to.

The Credit Societies should moreover extend their business to financing the rural industries. Peasants while away their spare time in idleness for want of sufficient capital for cottage industries. The existing Co-operative Societies in the taluka have supplied capital for the purchase of buffaloes for dairies. But, generally the sums advanced are very small and the experiment has not been successful except at Bodal and Haldari. The chief reason for the failure of this experiment is said to be lack of thrift among peasants. We suggest that the Co-operative Societies should not give up their attempt to extend their help to this and other village industries. Only they should carry on a more intensive propaganda in favour of thrift and other principles of Co-operation among the peasants.

Again, Co-operative Credit Societies should have sub-agencies for the supply of manures, seeds, etc., to their members. The loan for manure could be given in the form of manure itself instead of in money. This will relieve the Society of the anxiety to find out whether the borrower uses his loans for the purpose for which they are given. Again, cultivators would benefit from cheap rates at which the Co-operative Societies would purchase manures for them. The members would, moreover, receive the advice of the Society on the proper use of fertilisers. We have seen, sometimes the individual agriculturist purchases improved fertilisers on their own. But, unfortunately, they do not derive maximum benefit from them, because they do not know their proper use. They will use costly fertilisers as ordinary manure and hence do not reap the expected benefit.

Similarly, better seeds at cheap rates may be supplied to cultivators through seed societies. The peasants are still unaware of the good results of using better seeds. The Societies may encourage their use and also induce farmers to grow seeds on their own farms.

B. Sale Society :—The farmer is a producer and a seller. As a seller he benefits if he can dispose off his own produce

through a Co-operative Sale Society. For, collective selling will secure him better prices than individual selling. At present the cultivator is in the clutches of the middleman for the sale of his produce. He does not secure a favourable price nor is he paid properly. The establishment of Co-operative Sale Societies at important villages and marketing towns will save farmer from the middleman and give him the will to organise his production effectively.

C. *Purchase Society* :—Though a cultivator satisfies his wants mostly with the things that he himself produces, he has still to purchase some commodities from outside. For the purchase of spices, jaggery, clothes, wheat etc., he has to go to the village shop owned by a village Bania. But there he gets low quality at high prices. He is at the mercy of the Bania who is also his financier. Along with sales department of Co-operative Society, there should also be organised a purchase department for the supply of the farmer's wants.

The farmer's dependance upon the money-lender is manifold. He borrows money from him, sells his articles through him and has his wants supplied by him. The Co-operative Movement should attempt to free him from all these bondages at one and the same time. For so long there is a single link in the bondage, the showkar can always make use of it to harass the farmer. Preferably, therefore, the village Co-operative Society should be of the mixed type supplying credit to the farmer, selling his products and purchasing his requirements. This means, of course a more complex organisation and a more difficult task. But it has got to be faced if the farmer is to receive help from the Co-operative Movement.

D. *Co-operation for common work, common use of machinery etc.* :—In a taluka like Borsad, where 57 per cent. of the cultivators have hardly sufficient incomes to maintain themselves, one cannot expect large investments by cultivators individually on useful machinery, costly implements and expensive methods of cultivation which may be beneficial in the longer run. Even if they were to invest, it is advisable that such risks should be undertaken collectively. Absence of such combinations have already aggravated

the miserable conditions of the owners of the pumps in the taluka. The pumps remain idle for most part of the year and the owners are unable to meet their depreciation charges. Had the owners combined in installing the pumps the risks would have been divided. Besides, there are certain works which require united efforts of all the cultivators belonging to a particular area, e.g. for constructing drainage course, driving the wild animals from the fields, etc. In such cases individual efforts hardly succeed. If a cultivator drives wild animals or cuts a drainage course from his own field, he would injure the interest of his neighbour. This would lead to quarrels and litigation. The best method therefore, is to co-operate and get rid of the evil.

There are many such Societies in France and other western countries. For the last three decades the farmers of France have succeeded in protecting their crops against hail by firing off salvoes in rapid succession from a number of guns. The report of such salvoes are said either to drive away the hail charged clouds altogether or else at any rate to break up the hail stones into perfectly innocuous soft snow powder. Another instance of common work is the keeping of night frosts in vineyards by fumigation. Clouds of smoke generated at appropriate spots come between the frosts and the vines and shelter the latter. This service has been more scientifically organised of late. Cultivators form themselves into Co-operative Societies which provide open hearths at fixed suitable points. A central point is furnished with a 'Pagoscope' which indicates the evening weather change. If it indicates the danger of a coming frost a shot is fired to put members on their guard. Should the temperature descend close to freezing point, a second shot is fired which at once brings out the members to their appointed posts where fires are forthwith lit. Each man is allotted 40 hearths to keep alight and these are placed pretty close to one another. The treatment is said to be effective and cheap compared with the huge benefits the cultivators receive.

In the same way many of the difficulties of drainage, specially in the western part of the taluka, could be overcome. Villagers of different villages and owners of different

fields through which the channels are to pass may combine and carry out the project. Societies may be formed for the protection of crops from wild animals and much agricultural wealth may be saved. Societies may also be formed for the construction of village roads which are at present in a very bad condition. Similarly they may be formed for the supply of costly implements. Thus there is scope for innumerable forms of Co-operation in village life and the peasants should be alert to achieve the gains of Co-operative life in all possible ways.

E. *Land Mortgage Bank* :—Peasants require capital on long terms for redemption of old debts, mortgaged property and for permanent agricultural improvements. Such big loans cannot be paid within a short time and hence the necessity for long term loans. In absence of any organised agency for the supply of such long term loans (except the taccavi made by the Government on scarce occasions) the taluka peasants resort to the village showkar. When the peasant is unable to return the amount, the showkar snatches away the property secured against the loan. Hence the necessity of a Land Mortgage Bank in the taluka, which can provide long term loans at cheap rate of interest. In 1934 there were 13 Land Mortgage Banks in the Presidency, but none in the taluka or the District in which it is included. Recently a move has been made for the formation of a Land Mortgage Bank at Borsad. It will start with a capital of Rs. 1,00,000 subscribed through shares of Rs. 5/- each. The shares cannot be sold for payment of debts or confiscated by Law Courts. The Bank will be a limited one. The Government of Bombay has assured the people of the principal and the interest which they may invest in the Bank. The Bank would receive money at $3\frac{1}{2}$ per cent. rate of interest and would lend at $6\frac{1}{2}$ per cent. to cultivators for the redemption of old debts and sometimes for improvements in agriculture. The cultivator would repay his debt within 20 years by instalments. The loan will be secured by mortgage of land and the cultivator would receive only half value of his secured property.

CHAPTER X

LAND REVENUE

INTRODUCTION

The taluka at present contains the following kinds of villages¹:—

No.	Kind of village	Total No. of villages in the Taluka
1.	Senja Villages	88
2.	Nerva Villages	89
3.	Uddhad Jamabandi Villages	17
4.	Inami Village	1
	Total	90

The first and second types of villages are 72 in number and are known as Ryotwari Villages of the British Government. The rest are under the control of petty Thakors and one belongs to an Inamdar. The villages under Thakors are known as Uddhad Jamabandi Villages and that under Inamdar is known as Inami Village.

TENURES PREVAILING IN THE TALUKA

There are three kinds of tenures prevailing in the taluka, which can be classified as follows :—

- (1) Ryotwari or Sarkaria tenure including Nerva.
- (2) Uddhad Jamabandi tenure.
- (3) Inami tenure including Sanandia tenure.

RYOTWARI TENURE

History of the existing land revenue system in Ryotwari villages of the taluka dates from 1866-67 when first settlement survey was carried out. A revision survey was made in 1895, i.e. after 30 years. A third survey was made in 1925, but the recommendations made in the report were

LAND REVENUE

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The following table shows the different acreages of lands of the Taluka under unalienated or Sarkaria or Raitwari (including Nerva) and alienated or Uddhad Tenures :—

By survey of 1886				By revision survey of 1895				R E M A R K S : —
No.	Kind of land	Occupied acres	Unoccu- pied acres	Total acres	Occupied acres	Unoccu- pied acres	Total acres	
1	Dry Crop	37911	133	37769	75813	41075	146	79335
2	Rice	3813	26	2025	5864	3717	6	O.S.=Original Survey
3	Garden	7993	—	5951	13944	4836	—	N. S.=New Survey
4	Unculturable	—	8511	178	8689	—	8580	*The garden area of the original survey is now included in the Rice & Dry crop areas (Page 2, R. S. Report 1895)
	Total	49717	8670	45923	104,310	49628	8732	45912 104,272 ^t

^tThe area has de-
creased by 88 acres in
1895 from the former
survey.

not carried out as people strongly opposed the report as it recommended an increase of about 15 per cent. over the assessment of 1895. So the present rates of assessment are those which were fixed by the Settlement Survey of 1895.

Of the 72 Ryotwari villages, 33 are Senja¹ and 39 Nerva villages. But there is not a rigid distinction between the two kinds of villages and a Senja or a Nerva village may contain the other kind of tenures. Thus, Davol though a Nerva village, does contain lands under Senja tenure.

PRINCIPAL FEATURE OF RYOTWARI TENURE

The Ryotwari tenure has the following principal features :—

- A. State proprietorship of land.
- B. Field to field assessment.
- C. Individual liability of land holders to pay the land assessment (except in the case of Nerva villages).
- D. Periodic revision of survey settlement.

A. STATE PROPRIETORSHIP OF LAND

The theory that the State is the owner of all land including waste land is introduced by the British Government. Individual ownership of land which had been recognised since the time of Manu, is not upheld by them.² The holder of land has now been reduced to the position of a mere occupant.

The important rights of an occupant are the right to use, to make improvements for agricultural purposes, to transfer the occupancy and to relinquish the holding. Again, he has the right of pre-emption in relation to adjacent land and the right to use trees (except those which are reserved by the

¹ In a Senja village each land holder is responsible individually to the Govt. for the payment of his assessment. In a Nerva village the revenue is fixed in lump for all Nerva lands and the Nervadars (holders of Nerva lands) are jointly and severally responsible for the lump sum of assessment.

² "The committee are unanimously of opinion that, under both Hindu and Muhammadan rule, the State never claimed the absolute or exclusive ownership of the land and definitely recognised the existence of private property in it." Report of the Indian Taxation Inquiry Committee, 1924-25, Vol. I, page, 62.

Government) on their land for their purpose. He holds the holding so long as he pays the land revenue. The revenue which he pays is regarded as rent and not as tax as the latter implies private ownership of land. During the last Civil Disobedience Movement, the Government confiscated many parcels of land worth lakhs of rupees on account of the failure to pay land revenues by the occupants.

The assessment for any year is a charge upon that year's crop and the arrear is a first charge on the holding or any part thereof. The assessment is generally to be paid in instalments and within the time fixed by the Government. If any assessment is not paid at or before the time fixed, it becomes an arrear and the occupant becomes defaulter. For the collection of revenue two kinds of measures are adopted. First, there are precautionary measures which are resorted to in cases of apprehended defaults. The State authority prevents the reaping of crops on the field and their removal if they are reaped. Secondly, there are measures to recover arrears. They are, the service of a notice demanding the arrear, forfeiture and subsequent disposal of the holding on which the arrear is due, attachment and sale of the defaulter's movable and immovable property and the arrest and imprisonment of the defaulter in Civil Jail.¹

B. FIELD TO FIELD ASSESSMENT

Assessment is made with reference to each and every plot of land or fragment of land or survey number according to a standard known as Annawari.² The richest land is worth

¹ These particulars are summarised from "The Bombay Land Revenue Code".

² The village lands are measured, maps are constructed and demarkation or boundaries for each fragment of land is made by means of boundary marks. The minimum size of survey number was fixed as follows in the Districts of Gujarat.

No.	Class of land	Minimum Area		Remarks
		Acre	Guntha	
1.	Dry crop land	1.	00	Authority.
2.	Garden land	0.	20	Govt. resolution No. 1261 of 29th May, 1869
3.	Rice land	0.	20	

16 annas or even more e.g. when natural fertile plot possesses irrigation facilities in addition it is assessed at more than 16 annas, and the values of other lands are fixed by reference to the rich land.

C. INDIVIDUAL LIABILITY OF LAND HOLDERS TO PAY THE LAND ASSESSMENT

The third general feature of the system of land revenue in the taluka is that the assessment on a holding is directly fixed on its holder and every holder of land is individually responsible for the payment of his land revenue to the Government. The main idea of the system is to bring the cultivators in direct relation with the Government for revenue purposes as against the landlord system in which the Government deals with middlemen. This may ensure justice and safety to the farmers.

CASE OF NERVA LANDS

The Nerva tenure differs from the ordinary Ryotwari tenure in this respect. Under this tenure the village as a whole is jointly responsible for the payment of revenue on lands contained in it and the immediate responsibility for its collection and payment is placed on the head-man.

ORIGIN OF NERVA TENURE

Between the break down of the Moghul Empire and the rise of the British power in Gujarat, there was a period when the Maratha chiefs collected revenue under auction methods. Districts were farmed to the highest bidders. As the object of each farmer of revenue was simply to make as much money as he could during his few years of lease, villages began to break up under their oppression and peasants deserted them. In South Gujarat, "the powerful Desais

Holdings falling short of this minimum area are clubbed together to form a number of the standard size, unless by special concession of the settlement officer. The surveys which include dry crop land, garden land and rice land are known as "Mixed numbers."

Quoted from "The Bombay Survey and Settlement Manual, Part II" page 295.

contrived almost everywhere to oust the old patels and to divide the Paraganas (or the districts) amongst themselves as their property. But in some villages, especially in Broach and Kaira districts, the proprietary body succeeded in retaining the management of their villages, and in order to meet the new demands, founded, neither on a definite share nor on a fixed assessment of land, but only regulated by the ability of the Ryots to pay, they invented the Nerva or Bhagdari tenures. Thus the system was devised merely to distribute with some evenness a growing burden of taxation that would otherwise have been intolerable". In this tenure the revenue is fixed in the lump sum for the whole village and the revenue to be paid by each individual land-holder is in proportion to his share of the total village land. The head-man known as *Moksha Patel* collects the share of each and pays the total sum to the Government. He keeps the records of Nerva lands. In case of failure to pay the total amount or a part thereof, all Nervadars are jointly and severally liable for it. Under the Bhagdari and Nervadari Act of 1862 a sharer in the Nerva land cannot alienate or sell or transfer his share of land to anybody except to a co-sharer in the village property. The result is that the lands in the Nerva villages have remained in the hands of the agriculturists of the same stock.

D. PERIODIC REVISION OF SURVEY SETTLEMENT

There is no permanent settlement of assessment in the taluka. The assessment is fixed for a period which extends to thirty years in the case of lands used for agricultural purposes and to ninety years in the case of all other kinds of lands. Thus, since the first survey settlement in 1866-67, revision settlements were made in 1895 and in 1925.

HOW THE LAND IS ASSESSED?

The settlement officer takes various factors into account in assessing the lands. Firstly, he observes the 'Marked and permanent distinction' of the taluka with reference to its situation, climate and other physical features. Secondly, he examines the economic and revenue history of the taluka and

determines the total amount of land revenue to be realised from the tract. Thirdly, this total demand for land revenue is divided over the individual survey numbers by reference to the soil classifications. Fourthly, the lands are classed into (1) dry land, (2) garden land and (3) rice land. Garden land is that which has well or tank irrigation facility. Fifthly, lands are classified according to Annawari system under which the best land is valued at 16 annas and other lands are valued differently in Annas according to their variations from the standard of 16 annas soil. Generally the black soil is considered superior to the Goradu soil. Thus a black soil with a depth of $1\frac{3}{4}$ " is worth 15 annas while Goradu soil with the same depth is worth only $13\frac{1}{2}$. The *Bhatta* land (land formed by river) is richer than ordinary land and as "the 16 annas limit was not wide enough to cover the whole range of values, the maximum was increased to 20 annas".¹ Sixthly, water in the soil is considered a natural gift and hence one of the fertilising elements of the soil. So its value is included in the soil assessment whenever it is practicable. This inclusion is made on all lands which have water very near the surface, irrespective of, whether a well has been sunk or not. This is known as sub-soil water assessment. The maximum assessment for this purpose is annas four. Seventhly, the settlement officer estimates the gross produce as well as the net produce of each kind of soil. "However, the survey assessments are not based on an estimate of the produce or designed to secure for Government any fixed proportion of it. They aim at a true estimate of the relative capacities of fields in giving a return to average expenditure and labour. If the cultivator is slovenly, the assessment may doubtless absorb a considerable part of rent, if the cultivation is of an average quality, the assessment will be a fair and moderate charge, if a higher degree of skill and capital is applied the assessment will be a trifling percentage on the net profits. It rests mainly with the cultivator to decide what proportion the assessment shall bear to this receipts by the outlay of money and industry and the cultivator enjoys the

¹ The Bombay Survey Settlement Manual, 1917, Vol. II, page 341.

profits of his improved agriculture. But it is obviously reasonable that a field which will make a large return to capital and labour should be rated at a value somewhat higher than a field which has not the same capabilities".¹ Eighthly, nearness of the land to village site and marketing and transport facilities in the area are considered to increase or decrease the assessment on it. Thus a land which would have been assessed at a particular level, is assessed for less if it is away from the village site or lacks marketing or transport facilities. Similarly in fixing the value of land for revenue purposes, the class of cultivators who cultivate it, the density of population, the prices of the products grown, the rents paid by the tenants and the general prosperity of the people are taken into consideration. Lastly, improvements made in the land by the Government are assessed whereas those made by private enterprise are exempted.

Again, the following canons of taxation are taken into consideration before the revenue charges are finally imposed on the land holders. The first is the canon of certainty. It implies that the cultivator must know what he has to pay to the Government for the lands which he holds. Second is the canon of convenience which fixes the time for the payment of revenue by instalments at periods convenient to the peasant. The third is the canon of economy which suggests that economy should be observed as much as possible in assessing and collecting land revenue from the people. The fourth is the canon of ability which indicates that the peasant should be taxed in proportion to his ability to pay the tax.

"It should be noted that under Section 48 of the Bombay Land Revenue Code of 1879, the revenue on land is assessed according as it is used for agricultural or non-agricultural purposes. When land is used for one purpose and assessed in that capacity, if it is used for any other purpose the assessment fixed on it is liable to be altered even during the currency of the settlement."²

¹ Bombay Survey Settlement Manual, 1917, Vol. I, page 136.

² The Report of the Taxation Inquiry Committee, 1924-25, Vol. I, page 50.

LAND REVENUE ASSESSMENT ON THE RYOTWARI VILLAGES

It was on these principles that the revenue demands on all lands in the 72 Government Ryotwari villages were fixed during the second revision survey settlement in 1895. The settlement commissioner, Mr. E. Maconochie, having considered the relevant factors, found that the taluka was in a prosperous state and raised the assessment by 13 per cent. over that of 1867. The taluka villages were divided broadly into four classes according to their economic conditions and the quality of their soil.

We give below a table showing the effect of revision settlement made in 72 Government Ryotwari villages of the taluka, in 1895, over that of 1867.

First Class.

No.	Name of the village	Average assessment per acre in 1867	Average assessment per acre in 1895	Percentage of increase in 1895 over 1867
		Rs. As. Ps.	Rs. As. Ps.	%
1	Borsad	5 3 3	5 14 4	13·7
2	Bhavanipura	4 15 11	6 12 6	35·8
3	Israma	7 5 0	6 13 5	-6·7
4	Palaj	6 11 0	7 3 9	8·3
5	Pimplav	6 4 2	6 9 0	4·9
6	Rangipura	4 5 8	6 11 0	53·1
7	Sunav	7 0 7	7 7 9	6·5
Average		6 1 3	6 11 9	10·9

Second Class.

8	Alarsa	5 6 2	5 4 5	-2·1
9	Ambav	4 7 4	5 4 8	17·4
10	Armod	6 0 6	6 3 1	2·8
11	Ashi	3 15 9	4 15 4	24·6
12	Asodar	3 15 8	5 2 7	28·9
13	Bochasan	5 1 6	5 7 8	6·6
14	Bodal	4 14 5	4 14 9	0·2
15	Dabhasi	4 15 6	5 18 6	17·0
16	Danteli	6 2 3	6 5 8	8·8
17	Davol	5 8 5	5 5 11	-2·8
18	Davolpura	4 18 7	6 3 4	27·4

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No.	Name of the Village	Average assessment per acre in 1867			Average assessment per acre in 1895			Percentage of increase in 1895 over 1867
		Rs.	As.	Ps.	Rs.	As.	Ps.	
19	Dedarda	5	5	10	5	13	11	5·2
20	Dehmi	5	3	0	4	9	8	-11·2
21	Dhobikui	6	5	2	5	11	7	-11·0
22	Goel	3	15	7	5	13	2	46·2
23	Haladari	4	1	2	5	1	2	24·5
24	Harkhapura	4	0	10	5	1	8	25·9
25	Isnav	5	3	9	5	10	8	7·8
26	Jesarva	5	11	6	6	5	11	11·0
27	Jogan	4	1	11	5	12	5	38·1
28	Kansari	3	10	2	5	4	0	43·8
29	Kantharia	4	2	5	5	3	0	24·9
30	Kasumbad	3	8	11	4	10	5	3·6
31	Khadana	4	8	0	5	9	11	33·9
32	Khadol	4	0	7	4	18	6	19·9
33	Khanpur	4	15	10	5	8	3	10·2
34	Lakkadpura	4	3	10	5	13	2	36·9
35	Naman	4	14	4	4	10	8	4·6
36	Napa talpad	5	2	5	6	0	1	16·0
37	Nisaraya	5	2	8	5	5	7	8·2
38	Pamol	5	9	6	5	4	4	-6·1
39	Pandoli	5	10	2	6	8	7	15·9
40	Porda	6	5	1	6	1	5	-3·8
41	Ras	5	9	1	6	1	9	9·7
42	Rupiapura	4	9	9	5	12	4	24·8
43	Saigpur	5	8	1	5	15	11	8·6
44	Santokhpura	4	13	6	5	6	3	11·1
45	Singlav	5	14	11	5	6	0	-11·3
46	Surkava	6	0	9	5	9	7	-7·8
47	Dhundakuva	5	11	11	5	9	1	-3·3
48	Vasna	4	10	4	5	3	2	11·7
49	Vehra	5	14	6	6	1	8	2·8
50	Virol	5	0	0	5	7	1	8·8
51	Virsad	4	14	6	4	15	4	0·7
52	Vadeli	5	7	0	5	7	10	0·9
53	Vachhiel	4	10	6	5	5	2	14·3
54	Waradala	5	6	12	6	3	2	18·8
Average		5	0	9	5	9	2	10·1

PROBLEM OF LAND REVENUE IN RELATION TO THE PRESENT CONDITION OF CULTIVATORS IN THE TALUKA

Since the present assessment was first made, 40 years have elapsed, during which period economic and social life of the people have changed in many respects. Firstly, the average rainfall which was 36.43 in 1886-93¹ has increased by 2 inches on an average during the last 20 years. The irrigation facilities have been increased by the installation of 145 pumps but the irrigated land has not substantially increased. Secondly, the gross produce from the land was lower in 1932-33 by 26 per cent. in Juwar, 39 per cent. in Bajari and Rice, 35 per cent. in Kodra, 28 per cent. in Tuer, 33 per cent. in Udad and Math, 21 per cent. in Sesamum, 27 per cent. in Cotton and 28 per cent. in Tobacco than the normal outputs of these, which must have constituted the basis for the assessment in 1895-96. The gross produce had never been to normal 100 during the last 20 years except in two years, 1913-14 and 1916-17.² Thirdly, the wages of labour are (on an average) five annas a male and four annas a female which show an increase of 150 per cent. over those in 1895 when the rates were two annas a male and one and a half annas a female.³ Fourthly, the prices of agricultural products increased in 1932-33 by 106 per cent. for Tuer and 100 per cent. in the case of Tobacco, while they decreased by 34 per cent. in the case of Bajari and 36 per cent. in the case of Rice.⁴ Naturally the net income of the farmer must have been lower in 1932-33 than it was in 1895. Fifthly, the average rent per acre which is at present Rs. 16/- is 27 per cent. below the level in 1895 when it was Rs. 22 $\frac{1}{4}$ /6.⁵ Sixthly, unemployment among peasants has increased and subsidiary incomes have decreased as rural industries have declined greatly. Decline in handloom industry alone has been more than 70

¹ Revision Survey Settlement of the Borsad Taluka, 1895, pages, 34, 35, 36.

² Vide Chapter 4, Section F, "problem of diminishing return".

³ Revision Survey Settlement of Borsad-Taluka, 1895 page 8.

⁴ Vide Chapter 4, Section F, "The present agricultural crisis".

⁵ Revision Settlement Survey of Borsad Taluka, 1895, page 21.

per cent. since 1895. Seventhly, the pressure of population on land increased by 7 per cent. between 1891 and 1921.¹ If correct figures were available for 1931, they would have revealed a still greater pressure. Eighthly, total taxes (land revenue, excise, stamp duty, etc.) paid by the people to the Government, increased from Rs. 4,70,081/- to Rs. 5,61,113/- between 1901 and 1921. Though land revenue and local fund charges remained quite stationary, during the period, those on excise and stamp duties were considerably increased. People paid Rs. 41,589/- for stamps in 1901. The sum increased to Rs. 63,545/- in 1921. Similarly, excise charges increased between 1901 and 1921 from Rs. 29/- to Rs. 67,210/-. In brief, the aggregate burden of taxation which was Rs. 3.4 in 1901 per head of the total population in the taluka increased to Rs. 4/- in 1921.² Ninthly, the period between 1927 and 1933 was a period of woe and misery for cultivators of the taluka mainly in three respects. Firstly, the period is marked with economic depression all over the agricultural world and the taluka was not an exception. Secondly, it was a period of recurrent natural calamities. In 1927 there was a great flood which washed away the crops and houses of the people. In 1928, 1930, 1932 and 1933 there were frosts which destroyed the crops, specially tobacco and tuer. Thirdly, the cultivators suffered much from the great Swaraj Movement which was carried on between 1930 and 1933.

While all the above factors greatly decreased the net income of the cultivators, their standards of expenditure set in during the boom period (between 1916 and 1926) remained more or less the same. Expenditure on luxuries increased. The rate of interest did not go down and the indebted cultivator fell still more in the clutches of his showkar. Education increased only by 3 per cent. between 1901 and 1931. Migration in the taluka increased and the intelligent people deserted the villages. At present (1933-34) the assessment is about

¹ In 1891 the agricultural population was 74.65% (according to R. S. S. of Borsad, 1895, page 16) whereas that in 1921 was 82% of the total population (According to R. S. S. of Borsad, 1924, page 6, table 4.)

² Figures taken from "Kaira Gazetteers, 1904 and 1926."

No.	Name of the Village	Average assessment per acre in 1867	Average assessment per acre in 1895	Percentage increase in 1895 over 1867
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Third Class

	Name of the Village	Rs. As. P.	Rs. As. P.	%
		Rs. As. P.	Rs. As. P.	%
55	Ambali	3 13 4	4 11 6	22·6
56	Amiad	3 12 1	5 14 2	56·2
57	Anklav	4 0 10	4 15 1	21·7
58	Bamanva	5 5 11	5 10 8	4·6
59	Banejada	3 12 7	5 6 3	42·7
60	Bhetasi Talpad	4 0 3	4 11 0	15·8
61	Divel	4 0 4	5 5 2	81·8
62	Jantral	3 8 10	5 4 0	47·9
63	Kanbha	3 15 0	5 6 4	86·8
64	Khedasa	3 11 1	4 9 8	24·3
65	Muchhkuva	4 10 10	4 13 8	4·1
<hr/>		Average	4 1 10	5 2 10
				25·6

Fourth Class

66	Dali	3 1 5	4 1 1	81·7
67	Kalu	3 0 8	3 13 2	25·8
68	Kathol	2 15 10	3 14 7	80·7
69	Khatbal	3 4 8	4 6 10	82·5
70	Malu	4 0 0	5 0 10	26·8
71	Umlav	5 0 6	3 14 8	22·2
72	Vatra	3 7 5	3 15 7	14·6
<hr/>		Average	3 5 5	4 2 2
				23·8
<hr/>		¹ Grand Total Average	4 4 1	5 8 6
				18·1

SUB-SOIL WATER ASSESSMENT

The Government had fixed a revenue Rs. 19,520 on 7,993 acres of garden land (land irrigated by wells) during the first Settlement Survey in 1867 in the taluka. But at the Settlement Survey in 1895 it revised its policy and levied a new form of water tax on all lands capable of giving water, irres-

¹ Figures taken from Revision Survey Settlement 1895, page 26, 27 etc.
Borsad.

pactic of whether wells have been sunk in them or not. This tax is known as sub-soil water tax. The reasons for the change of policy were as follows. Firstly, the area under irrigation fluctuated every year and people who did not irrigate their garden lands suffered much. Secondly, the previous tax was a burden on all holders of garden land who had to pay more than Rs. 3/- per acre in addition to the soil rate. Thirdly, cultivators had restrained from investing capital in wells lest they were assessed. Fourthly, the Government could not impose any tax on wells constructed by private enterprise under the Land Improvements Loan Act of 1883. This seemed hard, as wells similarly built by individuals but before the survey of 1867 were subjected to taxation for no reason save that their owners were in advance of their neighbours in employing their capital in agriculture. Fifthly, the Government thought it consistent with the principles of survey to assess the inherent qualities of the soil, the sub-soil water being one of them. Hence, the Government declared its preference for levying a general sub-soil water rate to taxing only irrigated lands.

We give below a table showing the sub-soil water assessment as made in each class of village of the taluka, in 1895.

Class of villages	Land under sub-soil water in acres	Assessment in 1895 Rs.	Average assessment per acre
I	8,688	2,964	0 12 10
II	16,829	10,591	0 10 4
III	4,026	2,456	0 9 9
IV	1,809	681	0 6 0

It will be observed that the total assessment (water rate) was Rs. 2,468/- less than in 1867. Again the water assessment has been widely distributed and the incidence of the tax which was more than Rs. 3/- an acre has been lowered down to Rs. -/10/4 only per acre in 1895.

¹ Revision Survey Settlement of the Borsad Taluka, 1895, page 14.

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¹ Revision Survey Settlement of the Borsad Taluka, 1895, pages, 34, 35, 36.

² Vide Chapter 4, Section F, "problem of diminishing return".

³ Revision Survey Settlement of Borsad-Taluka, 1895 page 8.

⁴ Vide Chapter 4, Section F, "The present agricultural crisis".

⁵ Revision Settlement Survey of Borsad Taluka, 1895, page 21.

per cent. since 1895. Seventhly, the pressure of population on land increased by 7 per cent. between 1891 and 1921.¹ If correct figures were available for 1931, they would have revealed a still greater pressure. Eighthly, total taxes (land revenue, excise, stamp duty, etc.) paid by the people to the Government, increased from Rs. 4,70,081/- to Rs. 5,61,113/- between 1901 and 1921. Though land revenue and local fund charges remained quite stationary, during the period, those on excise and stamp duties were considerably increased. People paid Rs. 41,589/- for stamps in 1901. The sum increased to Rs. 63,545/- in 1921. Similarly, excise charges increased between 1901 and 1921 from Rs. 29/- to Rs. 67,210/-. In brief, the aggregate burden of taxation which was Rs. 3.4 in 1901 per head of the total population in the taluka increased to Rs. 4/- in 1921.² Ninthly, the period between 1927 and 1933 was a period of woe and misery for cultivators of the taluka mainly in three respects. Firstly, the period is marked with economic depression all over the agricultural world and the taluka was not an exception. Secondly, it was a period of recurrent natural calamities. In 1927 there was a great flood which washed away the crops and houses of the people. In 1928, 1930, 1932 and 1933 there were frosts which destroyed the crops, specially tobacco and tuer. Thirdly, the cultivators suffered much from the great Swaraj Movement which was carried on between 1930 and 1933.

While all the above factors greatly decreased the net income of the cultivators, their standards of expenditure set in during the boom period (between 1916 and 1926) remained more or less the same. Expenditure on luxuries increased. The rate of interest did not go down and the indebted cultivator fell still more in the clutches of his showkar. Education increased only by 3 per cent. between 1901 and 1931. Migration in the taluka increased and the intelligent people deserted the villages. At present (1933-34) the assessment is about

¹ In 1891 the agricultural population was 74.65% (according to R. S. S. of Borsad, 1895, page 16) whereas that in 1921 was 82% of the total population (According to R. S. S. of Borsad, 1924, page 6, table 4.)

² Figures taken from "Kaira Gazetteers, 1904 and 1926."

33 per cent. of the rent, 15 per cent. of the gross produce and 50 per cent. of the net produce in the fields in the taluka. Thus it is at its highest pitch. Nay, more. The Settlement Commissioner has overlooked the interest of the poorer cultivators and the land revenue policy of the Government is liable to criticism from many points of view, the Land Revenue Code is most uncertain and there is no fixed principle for charging assessment. "The uncertainty as to both the basis of the assessment and the rate, is one of the chief respects in which the Indian Land Revenue System are open to criticism".¹ Rental statistics are adopted as the basis for fixing the assessment, but the Settlement Officer is instructed and warned against placing too much reliance on rental statistics which are to be used mainly as a check on conclusion reached on more general considerations.² The special revision Settlement Report of Bardoli and Chorasi talukas fully discloses the difficulties of arriving at true rental statistics and emphasises the fact that, "in whatever manner the results of an individual village may be summed up for the purpose of exhibition in a statistical form, only the most general inferences can be drawn from them regarding the relation of "rental value" to the present maximum rate. A very wide margin indeed must always be allowed for the eccentricities of the raw material, and any attempt to use the figures as though they were capable of yielding a direct calculation of the "full standard assessment" should be regarded as wholly untrustworthy".³ No such care seems to have been taken in 1895, by the Settlement Commissioner of Borsad taluka. Similar are the difficulties of assessing lands on the basis of "land values". A person sometimes purchases land at a higher price only for ostentation. Sometimes he pays more as it is adjacent to the village site or near his own land. Thus land values would reflect in rare cases the real return. Secondly, net produce of the fields in the taluka has never

¹ The Taxation Inquiry Committee, 1924-25, Report, page 77

² Survey and Settlement Manual, Vol. II, page 394.

³ Report of the Special Inquiry into the second Revision Settlement of the Bardoli and Chorasi Talukas, 1929, page 40.

been calculated on scientific principles. It is the net income from the field which should finally decide the assessment share of the Government. Thirdly, in 1895 undue importance was given to trade and transport facilities in the taluka. There was no railway in the taluka till 1930, and the trade was carried through the stations on railway lines which were on its borders. Fourthly, the assessment is based on the assumption of favourable rainfall throughout the season. Although its value is well nigh sufficient, it is not properly distributed as we have seen in the second chapter. It is often precarious. Fifthly, though in cases of natural calamities like frost, flood, draught, etc., provisions were made for remissions and suspensions of assessment, they were inadequate and unsatisfactory. As found in our inquiry only 10 remissions and suspensions were made during the last 40 years, whereas the cultivators suffered more than 15 times during the period. Granting of remission and suspensions are considered as encouraging moral weakness on the part of the peasants and undoing the work of the Settlement Officer. "If we had never conceded a single suspension the Ryot would to-day be far richer, for they would have learnt absolute need of saving in the best years..... The only justification for remission is serious local disaster or flood which was not taken into consideration in fixing the average crop".¹ Sixthly, the Government has a tendency to discourage elasticity in the collection of land revenue. Even the Taxation Inquiry Committee, 1924-25, admitted that the canon of convenience "has in some respects been sacrificed to certainty..... It is undoubtedly a fact that the inelasticity of land revenue system drives a large number of people to the money-lender during bad seasons".² Seventhly, though the Government exempts improvements already effected, they are in anticipation of its potential advantages. This tax is known as sub-soil water tax and is charged on 26 thousand acres in the 72 Government villages. The tax amounts to 17,052 rupees. It is really a heavy burden where irrigated land is only about 10 per cent. of the total or about 9,000

¹ Facts and Fallacies, by Anderson, page 142.

² The Taxation Inquiry Committee Report, 1924-25, page 68.

acres. The Survey Commissioner observes in his letter to the Chief Secretary to the Government of Bombay in the Revenue Department, "No doubt, the Patidars are the cultivators who have improved their lands by digging wells and those other Dharalas etc., will be at a disadvantage till they follow suit".¹ Eighthly, heavy indebtedness which has been inherited by the Peasants is not taken into account in assessing their capacity to pay revenue. The Government seems to believe, that "savings and debt are two aspects of one thing—a surplus; and to pretend either can arise from a deficit is absurd".² The Broomfield Committee too thinks that, "existence of debt borrowed on security of the land is itself evidence that the land is good security. The extent of debt is an indication of the value of the security. We take the view that indebtedness is rather a problem for the social reformer than for the Settlement Officer".³ We have already seen how far indebtedness is a result of the needs of the people—either social or economic or agricultural—and when the Government intends to assess their income, it seems rather harsh to overlook the problem of indebtedness which greatly affects their economic position. Ninthly, as there was a great increase, during the last 40 years, in the sub-division and fragmentation of lands, and as the average agriculturist has no economic holding, agriculture has turned out unremunerative to most farmers. So the burden of assessment has thus proportionately increased on the poor cultivators. The Government does not reduce assessment on such uneconomic holdings. It fears that, "if the uneconomic holdings are not to get worse and the over-crowding on the land is not to intensify, then the over-payment of cultivators by paying them full wages for all off times and holdings or one year's pay for three months work cannot be encouraged. Their own economic position will be made far worse if this brazen claim were admitted".⁴ The Broomfield Committee also thinks

¹ The Revision Settlement Report of the Borsad Taluka, 1895, p. 67.

² Facts and Fallacies, by Anderson, 103

³ Report of the Special Inquiry into the Second Revision Settlement of the Bardoli and Chorasi Talukas, 1929, page 66.

⁴ Facts and Fallacies, by Anderson, page 83.

that it is unreasonable for a cultivator to expect a year's living in return for half year's work.

Theoretically this fact may be true, but in practice we have seen how difficult it is at present to organise agricultural activities on a scale so as to give full employment to the people. Tenthly, the Settlement Officer takes general economic condition of the tract into consideration even if it has improved by other means, e.g. by service, business, migration etc. Eleventhly, the practice of discriminating classes for purpose of assessment has taxed skill and intelligence of Patidars in the taluka who are ratably heavily assessed. Twelfthly, the Government has shut the doors of Civil Courts for people from having jurisdiction in matters connected with Land Revenue policy. Lastly, the assessment is raised more on the demand of money by the Government from a tract than on other principles of assessment. Major C. J. Prescott, the Revenue Assessor of the first Survey Settlement in this taluka in 1867, writes in his Survey Settlement Report of South Daskroi, ".....but on the other hand I am bound to consider the imperative necessity which exists to raise as much revenue as possible, and I must therefore, fix maximum rates with a view of producing effects, however otherwise desirable, as of assessing the Paragana as highly as it will bear".¹ This means that the land is assessed according to its maximum capacity.

Suggestions :—It is clear from the above facts that the real conflict lies in the determination of the share of the produce of the field between the two parties—the State and the Farmer. Such a conflict would not arise if the Government demand only a fixed share of the net income of the cultivator. This net income could be arrived at, by deducting all the expenditure of the cultivator on his farm, and as in the case of non-agriculturists the income-tax law exempts income below a certain level. The Land Revenue system should also safeguard the standard of life of the farmer and his family. Thus income from the farm would be assessed only in those cases where it is over and above these require-

¹ Page 64,

² page 93, (para 44).

ments. The poorer cultivators with small holdings should be relieved and the tax on the richer classes should not discourage enterprise. Mr. Anderson, of course, is right in a sense when he says that such a policy would lead to an increase in uneconomic holdings. But the Government can checkmate the evil by proper legislation. Secondly, instead of being merely an occupant of the land, the cultivator should be made the real owner, and the land revenue should be considered as a tax and not rent. The very idea of property has a charm about it which turns even a desert into a fertile plain. Thirdly, jurisdiction of the Civil Courts should be widened and the cultivator must have the right to challenge the decision of the Revenue Officers. Fourthly, the classification of lands into rice land, dry land and garden land should be abolished, as it obstructs improvements in land. Fifthly, as sub-soil water rate is a tax on the improvements in land, it should be abolished. Opportunities should be given to the villagers to extend the village sites without inviting heavy assessments for such extension. The Settlement Commissioner of the taluka in 1895, observes in the Report that "in spite of increase in population, not one village site has been opened nor one village site enlarged. The old sites are necessarily overcrowded to the great hindrance of sanitation and inconvenience of inhabitants. I would therefore recommend that no extra assessment be levied on the lands in question".

UDDHAD JAMABANDI

"The 'Uddhad' jamabandi is a fixed unalterable revenue settlement either for a piece of land or a village, or villages, without reference to the extent or nature of cultivation and without any right on the part of the Government to interfere in the internal management". The villages which were under the control of a Native Chief or Thakor or Zamindar prior to the advent of British rule has continued to be controlled by the same authority under the British Government. Thus of the 17 Thakoria villages, Bhanpur, Kanwadi, Bhetasi (Baria Talpad), Salol, Napa Vanto and Gajna have their separate Thakors. Bhetasi Vanto has two Thakors. Kanka-

pura, Gorwa, Dehvan, Bhadalpur and Kairhani are under one Thakor. Umota, Asarma, Amrol, Kothiakhed and Sankhiad are under the Thakore of Umota.

The Thakors collect revenue from the people of their villages, and after paying fixed sums due to British Government, they enjoy the surplus. They are invested with certain petty civil and criminal powers within their own villages. Generally people of these villages are Rajputs and Dharalas who lead a hand to mouth existence and whose income and expenditures are surveyed in our thesis in the third group of villages. Revenue paid by them is fixed and is not based on any strict principle of taxation, the charges per Bigha of land varying from Rs. 3/- to 8/-. The cultivators are more tenants than proprietors of land, though the Thakors who were once Hindu Kings, can have no property in land according to Hindu tradition. Steps were taken by the British Government in 1877 to introduce Settlement Surveys in these villages but the records of the Survey were destroyed by fire in 1887 and no more surveys have been attempted.

The villages of Bhetasi (Vanto) and Napa (Vanto) are under 'Vanta tenure' and differs in no way from the villages held by Thakors. The Muhammedan Rulers of Gujarat had deprived the original chiefs of a part of the lands in these villages and given them to some of friends or relatives of theirs. In some cases, the Vantas were held free, but in majority of the cases a quit rent was exacted by the paramount power. No holder of the Vanta land had any documentary evidence to prove his title before the enactment of the Summary Settlement Act of 1863, under which some of the Vanta holders accepted Sanads and converted their former lump quit rent into a number of Salami tenure lands. Other Vantas still continue to pay Udhad jamas. Bhetasi and Napa Vantas in our taluka pay Udhad jamas.

INAMI LAND

The third tenure is known as the 'Inami Tenure' and the land held under it is called alienated land. Before 1875, there were three Inami villages, Ralaj, Jesarwa and Kesari.

But the last two lapsed to the British Government in⁷ the same year and now there remains only one Inam village in the taluka. In old days any independent Thakore or Ruling Chief made grants of land to any person who rendered him valuable services and thus asserted his rights of sovereignty. This privilege he zealously exercised in order to extend and to perpetuate his authority. Now the right of making such a grant is taken away by the Government of India.

The Inamdar of 'Ralaj is a Parsi gentleman whose ancestors had received the village as a present during the Maratha rule. The British Government first of all did not accept his right to the village and the Parsi Inamdar had to fight to the finish before the Privy Council in England, which accepted his rights. The village is situated in the west of the taluka near the bay of Cambay. It contains 1,776 persons and has a Primary Vernacular School. There is no regular Survey Settlement of this village and the rates of assessment vary from Rs. 4/- to Rs. 12/- per acre according to quality of land. The cultivators who are mere tenants have no right to trees grown on their lands. They have to take the permission of their Inamdar before cutting them down. The cultivators cannot even sell or mortgage their lands. They fought for these rights and appealed to the Bombay High Court in 1932-33, but unfortunately the appeal was not allowed, and both are still quarrelling. The Inamdar has an yearly income of Rs. 14,000/- from the village. He pays only Rs. 546/10/- to the British Government.

SANADI LANDS

Another type of tenure coming under the Uddhad Jambandi is known as *Sanadia* tenure which is found among villages in the 1st and 2nd groups. It is said that these lands were assigned free of revenue as *Inams* by Maratha Chiefs to certain Patidars who rendered them valuable services in times of distress. When first Settlement was made in the taluka under British rule, these land holders claimed exemptions in virtue of their previous rights. The British Government inquired into the original Title

Deeds and exempted those who could prove their rights. The Government, however, levied a nominal assessment varying from 3 annas to 12 annas per Bigha and issued Sanands to their holders. Below we give a copy of one such Sanad issued by the British Government.

THE SECRETARY OF STATE IN COUNCIL
TO

NAME OF THE HOLDER :—Vaidya Vajeshanker
Nandshankar.

Whereas certain land described below has been brought under the Summary Settlement authorised by act VII of 1863 of the Bombay Legislative Council, it is hereby declared that the said land, subject (in addition to Salami or other payments which may have been hitherto levied) to the payment to Government of annual (Salami) quit of Re. 0-12-0 shall be continued for ever by the British Government as a private property of the persons who shall from time to time be its lawful holders without increase of the said Quit rent and without any objection or question on the part of the Government whether the rights of the said lawful holders shall have accrued by inheritance, adoption, assignment or otherwise, but on the condition that such lawful holders shall continue loyal and faithful subjects of the British Government.

Taluka Collectorate and village	Name of the holder	No. of the field	Measure- ment	Full Assess- ment	Per Re. of which paid to Govt.	Fixed unit rent
			Acre	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.
Anklav.	Vaidya	1672	1-6	6 4 0	0 2 0	0 12 0
Taluka Borsad Dist.	Vajeshanker Nandshankar Kaira					
				Total annual payment to Govt.	Rs	0 14 0

This Sanad is executed on behalf of the Secretary of State in Council by order of the Governor in Council of Bombay by and under name of Edward William Rasienscroft, Esq.,

Chief Secretary to the Government dated—15th November,
1877.

The main peculiarity of the Sanadia tenure is that the soil belongs to the holder and unlike unalienated lands it can be put to any use even other than agricultural without the permission of the Collector. The assessment on this tenure subject to the terms of the grant is permanent and unalterable. Teak, Sandal wood and Black wood on Sarkaria land are reserved by the Government and cannot be cut without its permission. But this law does not apply to trees on Sanandia lands.

CHAPTER XI

STANDARD OF LIVING

India is a country where the standard of living of the people and specially of agriculturists is very low. The agriculturists in this taluka lead a very simple life. There are no amenities for them except village gossips, smoking Hukkas, occasional visits to the town and caste dinners. Except in the case of a few well-to-do Patidars, the daily necessities of an average cultivator are few. This is due to his poor income. But even within the narrow limits found by the general low level of incomes of cultivators of all classes, the standards of life of Patidars and of Dharalas differ. The difference is due prominently to the differences in their incomes and their social status. For, the caste of a cultivator largely determines his outlook on life and a fairly well off Dharala lives less decently than a poor Patidar. We have therefore considered it necessary to discuss the standard of life of Patidars and of Dharalas separately.

A Patidar and a Dharala spends a year on an average Rs. 302/- and 'Rs. 150/- respectively. These expenditures include payment of interest on debt which is about one-third of the total expenditure in both the cases. The following table gives the distribution of annual expenditure by a Patidar and a Dharala family.¹

¹ Vide Appendix A at the end of this chapter which gives the distribution of annual expenditures of the families surveyed in the selected villages of the three groups of the taluka.

SCHEDULE OF ANNUAL EXPENDITURE BY AN
AVERAGE PATIDAR AND A DHARALA FAMILY IN THE
TALUKA

		Patidar Ist and 2nd Group	Dharala 3rd Group
		Rs.	Rs.
I.	Food	118	67
II.	Clothes	33	19
III.	House repair Service	9 6}	1 4}
IV.	Medicine Education	3 19}	1 1½}
V.	Social Miscellaneous	10 13}	6 4}
VI.	Interest	101	49
Total Rs.		301	151½

FOOD SURVEY¹

The food survey of an agricultural population is beset with several difficulties arising out of factors which vary with the success or failure of the annual monsoon in the area under observation. The problem of food is fundamentally controlled by the income of the house owner. And it is easy to realise that an agriculturist, however well established, will husband his resources during a lean year or again spread out and live lavishly during a prosperous year following a bumper monsoon. Further it invariably happens that during a prosperous season, marriage festivities are celebrated in the community to which the agriculturist belongs, and the festivities provide occasions for sumptuous dinners which very often last for weeks. There is a tendency for all agriculturist owners and workers to live on what they grow. Therefore, it will be noticed from the statistics that we have compiled that certain cereals grown in the taluka namely Bajari, Kodra, Tuer and Rice gain preference in their

¹ In this 'Food Survey' we have been kindly helped by Dr. C. S. Thakar, L. M. & S., F. C. P. S., Bombay.

dietaries over other cereals which are imported into the taluka from elsewhere. These factors constitute an element of variation which for statistical purposes, it is well nigh impossible to correct.

A Patidar family consists on an average 6 members of which three are adults and three are children. It spends Rs. 113/- for food in a year. A Dharala family consists of 5 members of which three are adults and two are children. It spends Rs. 67/- on food.

A Patidar usually eats twice a day. When a part of the meal prepared at night is left unconsumed, he eats also in the early morning next day as a breakfast prior to his field work. His breakfast in the morning consists of a loaf and a glass of butter milk. He returns from his field for his meal at about 11-30 or 12 in the noon. His usual meal consists of Khichadi (made of rice or kodra with tuer dal) with curry made from butter milk which he usually gets free from his neighbour who has churned the curds. He takes pickles made of mango fruit or chillies or lemons. He also takes ghee along with the Khichadi and its quantity varies with the wealth of the family. Khichadi is occasionally replaced on festive occasions and holidays by wheat preparations. The Patidar takes his second meal at eight in the evening. He eats loaves made of Bajari or Kodra with some milk, vegetables and pickles. The meal is supplemented by jaggery on certain occasions. However it is used always with the dishes prepared from wheat flour.

The Dharala who is poorer than the Patidar, generally does not have anything to eat in the early morning, but eats twice a day, once at noon and again at night. He is too poor to afford regular meals at both the times throughout the year. Generally during summer he feels scarcity of food and occasionally has to maintain himself on vegetables and fruits like Mahura, Rayen, Bore, Mangoes etc. On such occasions he would take his meal only once a day. However his usual mid-day meal is Khichadi (made of Kodari and Dal) and curry. He would rarely use rice in his diet. Similarly wheat is used only on important festive occasions like Dashera, Holi, Divali etc. He consumes very little ghee. He is too

poor to afford vegetables, but usually takes pickles and chillies. At about eight in the evening he eats loaves made of Bajari or Kodra with vegetables (obtained free from his field), butter milk and pickles.

The following tables give the food and its chemical worth of an average Patidar family and of an average Dharala family in the taluka.

TABLE I.

Yearly consumption of food by a Patidar family and a Dharala family of 4 adults. (Three children = 1 Adult)

Name of the article	Patidar family 4 Adults			Dharala family 4 Adults		
	Quantity in Mds.	Rate per Md.	Rs. As.	Quantity in Mds.	Rate per Md.	Rs. As
Wheat	3	2 0	6 0	0·6	2 0	1 3
Rice	5	1 12	8 12	3	1 8	4 8
Kodari	10	1 4	12 8	12	1 0	13 8
Dal	9	1 12	15 12	4·5	1 8	6 12
Bajari	9	1 4	10 12	6	1 4	7 8
Kodara	9	1 0	9 0	12	1 0	12 0
Vegetables (Paid)	2	1 0	2 0	—	—	—
Vegetables (Free) ¹	4 ¹	—	—	6 ¹	—	—
Butter-milk	36	—	—	36	—	—
Ghee	0·9	22 0	20 0	0·23	22 0	5 0
Milk	3·6	1 14	6 12	3·6	1 14	6 12
Salt	2	1 4	2 8	1	1 4	1 4
Sweet Oil	1·8	5 0	9 0	0 9	5 0	4 8
Jaggery	1·8	3 0	5 6	0·9	3 0	2 11
Chillies	0·9	5 0	4 8	0·45	4 0	1 12
Spices	0·45	3 0	1 5	0·45	3 0	1 5
Total			114 3			68 11

¹ Available free from his field.

TABLE II.

The daily food of an adult Patidar and of an adult Dharala consists of the following items in varying quantities.

Name of the article	Quantity of Food consumed by:-			
	A Patidar Adult		A Dharala Adult	
	Tolas	Days in a Month	Tolas	Days in a month
Wheat	25	4	20	1
Rice	20	9	20	5
Kodari	20	17	20	20
Dal	10	30	5	30
Bijari	20	15	20	10
Kodara	20	15	20	20
Vegetables	7	30	7	80
Butter Milk	20	30	20	30
Ghee	1	30	$\frac{1}{2}$	15
Milk	8	15	8	15
Salt	2	30	1	80
Oil	2	30	1	80
Jaggery	2	30	1	80
Chillies	1	30	$\frac{1}{2}$	30
Spices	$\frac{1}{2}$	30	$\frac{1}{2}$	30

TABLE III.

The following table gives the chemical worth of a tola of each kind of food taken by the cultivators in the taluka.¹

No.	Food item	Caloric	Protein	Calcium	Phosphorus	Iron
1	Wheat	40.8	1.56	.0051	.0480	.00055
2	Rice	45.2	0.72	.0010	.0109	.00010
3	Kodari	35.6	1.18	—	—	—
4	Dal	40	2.50	.0120	.0496	.00090
5	Bijari	43.6	1.11	.0016	.0370	—
6	Vegetables	3.25	0.14	.0010	.0040	.00005
7	Curd	7.2	0.56	.0260	.0195	.000037
8	Ghee	83.2	—	—	—	—
9	Milk	12	0.54	.0130	.0100	.0036
10	Salt	—	—	—	—	.0168
11	Oil	100.8	—	—	—	—
12	Chillies	45	1.07	—	—	—
13	Masala or spices	44.4	1.76	—	—	—

¹ Census of India, 1931, Vol. XIX, Baroda, part I, page 308.

TABLE IV.

The following table gives the chemical worth of the food consumed during a month by an average Patidar adult in the taluka.

No.	Food item	Caloric	Protein	Calcium	Phosphorus	Iron
1	Wheat	4080	156	0.51	4.8	0.055
2	Rice	7936	129.6	0.18	1.962	0.018
3	Kodari	12104	401.2	—	—	—
4	Dal	12000	750	8.60	14.88	0.270
5	Bajari	13080	383	0.48	11.1	—
6	Kodara	10680	354	—	—	—
7	Vegetables	682.5	29.4	0.21	0.84	0.01050
8	Curd	4320	326	15.60	11.7	0.02220
9	Ghee	2496	—	—	—	—
10	Milk	1440	64.8	1.56	1.2	0.00860
11	Salt	—	—	—	—	0.03860
12	Oil	6048	—	—	—	—
13	Chillies	1350	32.1	—	—	—
14	Spices	666	26.4	—	—	—
15	Jaggery	(Figures not available)				
A.	Total per month	76882.5	2612.5	22.14	46.482	0.4120
B.	Total per day	2563	87	0.74	1.55	0.01376
C.	Surplus after less 10% waste	2307	78	0.67	1.395	0.01239
D.	Standard require- ment	2500	75	0.45	1.44	0.0150
E.	(+) Surplus or (-) deficiency	-193	+3	+0.22	-0.045	-0.00261

TABLE V.

The following table gives the chemical worth of the food consumed during a month by an average Dharala adult in the taluka.

No.	Food item	Caloric	Protein	Calcium	Phosphorus	Iron
1	Wheat	816	31.2	0.102	0.96	0.011
2	Rice	4520	72	0.1	1.09	0.010
3	Kodari	14240	472	—	—	—
4	Dal	6000	375	1.8	7.44	0.135
5	Bajari	8720	222	0.82	7.4	—
6	Kodara	14240	472	—	—	—
7	Vegetables	682.5	29.4	0.21	0.84	0.01050
8	Curd	4320	326	15.6	11.7	0.02220
9	Ghee	624	—	—	—	—
10	Milk	1440	64.8	1.56	1.2	0.00360
11	Salt	—	—	—	—	0.01680
12	Oil	3024	—	—	—	—
13	Chillies	675	—	—	—	—
14	Spices	666	26.4	—	—	—
15	Jaggery (not available)	—	—	—	—	—
A.	Total per month	59967.5	2100.9	19.692	80.63	0.20910
B.	Total per day	1999	70.0	0.656	1.02	0.00697
C.	Surplus after less 10 % waste	1790	63.0	0.591	0.92	0.00628
D.	Standard require- ment	2600	75	0.450	1.440	0.01500
E.	(+) Surplus or (-) deficiency	-701	-12.0	+0.141	-0.52	0.00872

The following inferences can be drawn from the five tables given above.

- (1) Nutritional value of the agricultural population in the taluka is poorer than standard dietaries.
- (2) The agriculturist owner (the Patidar) lives on a superior diet than the tenants and the agricultural labourer (the Dharala).
- (3) The diet of both the Patidar and Dharala contains too much carbohydrates and less fat than the standard requirement.
- (4) Vitamin content of the two dietaries meets with the minimum needs of the body.

The result has been that the general physique of the people is below the mark in spite of the excellent dry climate of the taluka. Again epidemics are frequent in the taluka and take a heavy toll of life. It would be apparent that the population under survey suffers from three deficiencies in their dietary; and it should be the endeavour of all concerned with their health and welfare to attempt to remove these deficiencies. But age long habits and economic factors govern the dietary of the population. The income of the peasant is insufficient to provide a square meal for all the members of their, often, large families. Very often it happens that the wage earners in the family are few, while children who are not earning are numerous. Often too sickness in the family makes a big cut in his income. Debt charges, wedding celebrations and pilgrimages to distant parts of the country reduce his income further. Failure of the monsoon occurs with annoying frequency and though the gracious Government does remit the land revenue, the remissions have to be made good in the year following. These factors seriously limit the capacity of the farmer to spend sufficiently on food.

There are however besides other aspects of the problem the right choice of diet within the means of the average peasant. The question of supplying a better and more nourishing type of food is mainly an educative and agricultural problem. The highly equipped agricultural department with its ample resources must study the question from the practical point of view and devise ways and means to induce and enable the cultivator to grow on his own soil the type of food which have a good protein content. Soya Bean cultivation should be encouraged. Facilities should be provided for greater cultivation of oil seeds in the taluka and local Co-operative Societies should assist the agriculturist by financing him. He can then grow these nutritious food stuffs for the benefit of the population of the taluka. Better types of cattle and buffaloes should be reared, and the milk supply of the taluka rendered richer in protein and fat, and children will grow on a more thriving diet. These are some

of the measures which if adopted, will slowly and steadily improve the health of the people in our taluka.

II. CLOTHES

The Patidar has sufficient clothing to protect his body. He wears a red turban (now replaced to a great extent by the Gandhi Cap), puts on a shirt and a long coat, has a long dhoti and uses a stick. He walks seldom without shoes. The Patidar woman is also well dressed. The family spends on an average Rs. 33/- a year on dress. The Dharalas on the contrary are insufficiently dressed and spend only Rs. 19/- per family on dress every year. Their usual dress consists of a falia and a short dhoti reaching up to the knees. They seldom put on shoes. They dress sufficiently only when they go out of the village.

III. HOUSE REPAIR Etc.

Expenses on house repair and services are very limited in both the castes. The expenditure on the services of the Barber, the Bhangi, the Chamar, the Potter etc., are called 'Vasavaya'. The Barber's wife acts as a mid-wife. The Bhangi sweeps the village streets and conveys to the relatives in neighbouring villages the sad news of the death of any member of the family. The Chamar carries the dead bodies of the cattle and the Potter supplies the earthen utensils. The Barber is paid about Rs. 3/-, the Potter Rs. 2/- and the others annas eight a year. They are also entitled to receive cooked food on public holidays and at caste dinners. A Dharala pays less than a Patidar.

IV. MEDICINE AND EDUCATION

The expense on medicine is very limited in both the castes. The cultivators have become callous due to their poverty and allow the disease to take its own course. If there is serious sickness in a Patidar family, debts have to be incurred before the patient can be sent to hospital in the nearer cities.

The expenditure on education of a Patidar family is Rs. 19/- a year and that of a Dharala is less than a

rupee. The latter is unable to educate his children due to extreme poverty. 90 per cent. of the Patidars also do not spend more than Rs. 3/- a year on education of their children who get merely primary education. High average expenditure on education among Patidars is due to large sums spent by some of the enlightened Patidars on higher education of their children.

V. SOCIAL AND MISCELLANEOUS

A Patidar spends Rs. 10/- and a Dharala Rs. 6/- on petty social and religious functions like the dancing of Bhavaiyas, Hari Kirtans, small religious festivities, and charities to local institutions. Expenditure on important social events e.g. marriages, death feast etc., are capital expenditures incurred once in 10 to 20 years. These expenses are met out of loans incurred and the annual charge in connection with these events is reduced to the payment of interest. Hence these expenditures are included under the heading of interest on debt.

Miscellaneous expenditure consists in both the cases of expenses incurred on city visits, purchase of metal vessels, purchase of household furniture, smoking expenses etc. The Patidar spends about Rs. 13/- and the Dharala Rs. 4/- a year.

VI. INTEREST

Interest on debt is a standing charge to be paid at the end of the year. As large part of the debts were incurred for social purposes, we have included all interest payments in the schedule of cost of living. When the cultivator does not pay interest, the amount is debited to his account. Interest charges are about one-third of the total expenditure in the cases of both Patidars and Dharalas. The highly indebted Patidar pays more interest than the Dharala.

CRITICISM AND SUGGESTIONS

It will be observed from the above description that the standard of living of an average peasant in the taluka, whether a Patidar or a Dharala, is very low. This is due

to his poverty. His net income from agriculture and subsidiary sources is insufficient to meet even his present wants of life. We have given in appendix A at the end of this chapter incomes and expenditures of the farmers in each group of villages in the taluka. It is seen from it that 57 per cent. of the families are unable to make both ends meet even at the existing low standard of life.

TABLE I.

Number of families making profits or suffering losses in each group of villages. Percentage figures are given within brackets.

From Rs.	Profit			Loss		
	Group I	II	III	Group I	II	III
1 to 100	35 (23)	20 (25)	14 (25)	41 (27)	25 (31)	33 (59)
101 to 200	15 (10)	6 (7)	8 (5)	15 (10)	11 (14)	6 (11)
201 to 300	14 (9)	2 (3)	—	13 (9)	7 (9)	—
301 to 500	13 (8)	1 (1)	—	5 (3)	8 (10)	—
above 500	—	—	—	1 (1)	—	—
	77 (50)	29 (36)	17 (30)	75 (50)	51 (64)	89 (70)

DECENT STANDARD OF LIFE

Evidently the present standard of life of our peasants is not what it should be. This leads us to the question, what is a decent standard of life for farmers in the taluka? Of course it is not bare subsistence nor can it be a luxurious living. Any income that sustains sufficiently and provides comforts and amenities to a middle class cultivator can be said to be a decent standard of living.

Thus a cultivator must have sufficient food and clothing, a well-ventilated decent house, provision for primary education of his children and simple medical treatment of his family. He must have income to pay for the services of his artisans like the Barber, the Potter, the Chamar etc. He should also have enough income for small social and religious ceremonies and other recreations. We include expenditure on recreations; for, every hard working person would realise

how essential a reasonable amount of recreation is to the maintenance of efficiency. Mr. Carver thinks that a rational standard of living must include a reasonable expenditure of time and money on recreations. "Just what is reasonable expenditure for this purpose may not be easy to determine, though there need not be disagreement as to the general principle that too little recreation which produces dullness of body and mind is as bad as too much, which is mere dissipation or waste of time, energy and money".¹ Besides these, the peasant must be able to pay interest on his debt. We think, an average agriculturist for long time to come, if not for always, shall remain indebted. His income is rendered unsteady by the caprices of nature, like frost, flood, cattle disease etc., and he will have to borrow for one or other purpose to meet the difference between current income and expenditure. Of course during good seasons he will repay the principal of his debt, but in ordinary years he should be in a position to meet the interest charges. The showkar is careful to receive his interest dues every year and he adds them to the principal sum if they are not paid. At present the interest payments by an average farmer constitute one-third of the total expenditure of the family. But when the farmer's position is improved, we should expect a reduction in his debts. He will meet the expenses due to sickness etc., out of his own savings, so that the debts would be reduced to what is necessary for productive and also partly for social occasions.

A word may be said here that the mode of life of rural communities should not be an imitation of city life. Much of the present unrest in the villages is due to a desire to imitate city habits and city modes of life. When the people, "develop a reasonable pride in the fact that they are country people and in their country dress, country habits, country customs; and when this pride is justified by the inherent sanity and simple, unostentatious dignity of their lives—then we shall have rural civilisation worthy of name".²

¹ Principles of Rural Economics, by T. N. Carver, page 366.

² Ibid, page 370.

Estimates of cost of such a standard of life can be obtained by observing the standard of life of middle class families in the area. The standard of life of different castes differs widely from one another, but we are here outlining a minimum decent standard of life for a cultivator irrespective of caste or creed. After careful considerations, we suggest the following minimum standard of life for an average cultivating family in the taluka.

I.	Food	...	...	Rs. 150/-
II.	Clothes, etc.	...	..	50/-
III.	House repair and Vasavaya		"	10/-
IV.	Medicine and Education		"	25/-
V.	Social and Miscellaneous } recreation etc.		"	25/-
VI.	Interest	...	...	<u>Rs. 40/-</u>
			Total	Rs. 300/-

APPENDIX A.

The following table gives the expenditures on standard of life by different items in the three groups of villages of the taluka. The total number of selected families in the 1st, 2nd and 3rd groups of villages are 152, 80 and 56 respectively.

No.	Item of Expenditure	Group I Rs.	Group II Rs.	Group III Rs.
I.	Corn	9,091	5,087	2,501
	Ghee	3,920	2,203	611
	Oil, Spices etc.	3,471	1,909	630
II.	Clothes	5,006	2,589	1,055
III.	House repairs	358	278	46
	Services	799	512	200
IV.	Medicine	508	258	36
	Education	2,676	1,761	16
V.	Social	1,246	838	358
	Miscellaneous	1,594	1,828	208
VI.	Interest	15,312	8,126	2,748
	Total	43,981	24,874	8,409

CHAPTER XII

CONCLUSION

We have studied and discussed in the preceding pages all the aspects of agriculture and the economic and social condition of the agriculturists in the taluka. We have also offered suggestions for the betterment of these conditions. It is however often very difficult to carry out these proposals in practice. "Civilisation consists largely in taking pains",¹ and the point at issue is whether the agriculturists in the taluka are willing to undertake the trouble and are capable of being civilised. The Royal Commission on Agriculture in India, 1927, felt the same difficulty. "No substantial improvement in agriculture can be effected unless the cultivator has the will to achieve a better standard of living and the capacity, in terms of mental equipment and of physical health to take advantage of the opportunities which science, wise laws and good administration may place at his disposal. Of all the factors, making for prosperous agriculture, by far the most important is the outlook of the peasant himself".²

Hence we think that all reforms should start with the peasant; he should be made to take interest in his own life, and a better outlook should be developed in him by efficient organisation and propaganda carried out by local Government authorities as well as by public institutions and social workers. A Village Uplift Society should be started in each village with enthusiastic selfless workers as its members, to guide and advice villagers in their economic and social activities. It should also keep watch over the activities of the villagers and should try to lead them to better ways of life and should dissuade them from economically ruinous practices. Thus only when the peasant has a greater interest in better life than he has at present, will he adopt improve-

¹ Principal of Rural Economics, by T. N. Carver, page 355.

² The Royal Commission on Agriculture in India, 1927, page 672.

ments in agriculture and try to make a success of it as a business proposition. In the words of Darling, the aim of agricultural reform should be "to free the peasant from the disabilities of poverty and ignorance and enrich him with the essentials, but not necessarily the luxuries of civilised life. And in encouraging him to develop his lands, we should not appeal to the love of gain, for that is an ignoble end, but inspire him with the desire for things that matter, such as education and health, believing that, if this desire is awakened, the necessary efforts to satisfy it will follow. In this way, material prosperity will be clearly to be a means to an end, and not an end in itself; to be in fact the basis, and not the fulfilment of civilised life. So conceived the progress made will be real".¹

APPENDIX A.

The appended table gives the following figures of each of the 288 families which we examined in the three groups of villages in the taluka.

- (1) Name of the village and form number.
- (2) Number of persons in the family.
- (3) Total area of land cultivated by the family in Bighas.
- (4) Gross income from (3) in rupees.
- (5) Cost of cultivation of (3) in rupees.
- (6) Net income from (3) in rupees.
- (7) Income from other sources (which includes income of rent, cattle, services etc.) in rupees.
- (8) Total income in rupees.
- (9) Household Expenses in rupees.
- (10) Surplus (+) or deficit (—) of income over expenditure in rupees.

¹ The Punjab Peasant in Prosperity and Debt, by Darling, p. 272.

GROUP I.

Village	No. of persons in a family	Land tilled	Gross farm-income	Cost of production	Dif.ference	Income extra	Total income	Home expenses	Net surplus 10
1	2	3	4	5	6	7	8	9	10
Davol	1	4	Bighas	Rs. As.	Rs. As.	Rs.	Rs. As.	Rs.	Rs. As.
	2	12	13	341 0	196 0	145 0	95	240 0	298 -58 0
	3	5	28½	733 0	439 0	294 0	80	374 0	-96 0
	4	5	11½	342 8	221 0	121 8	110	231 8	-36 8
	5	14½	14½	392 4	255 0	137 4	100	287 4	-10 12
	6	4	17	503 8	283 0	220 8	80	300 8	-14 8
	7	11	29½	996 12	481 0	515 12	180	695 12	+246 12
	8	7	16	527 8	302 0	225 8	470	695 8	+145 8
	9	9	34½	981 12	610 0	371 12	100	471 12	+172 12
	10	12	8	192 4	132 0	60 4	261	321 4	-128 12
	11	2	25½	696 0	362 0	334 0	70	404 0	+151 0
	12	6	9	251 0	249 0	2 0	46	48 0	-65 0
			4½	90 4	77 0	12 12	59	71 12	-82 4
Total		81		211					
Singlav	1	5	24	583 0	339 0	244 0	95	339 0	341 -2 0
2	8	10	336 0	342 0	-6 0	455	149 0	352 +97 0	
3	4	11	296 8	318 0	-16 8	280	263 8	249 +14 8	
4	6	14	335 0	266 0	69 0	90	159 0	232 -73 0	

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Village	No. of Persons in family	Land tilled	Gross farm-income	Cost of production	Difference	Income extra	Total income	Home expenses	Net surplus
	1	2	3	4	5	6	7	8	10
Dhundakura	1	3	12	474	0	179	0	58	387
	2	6	28	975	4	479	0	686	177
	3	5	1½	205	0	225	0	59	9
	4	4	6½	222	0	105	0	117	0
	5	4	13	723	8	399	0	324	8
	6	6	6	242	4	113	0	129	4
	7	8	2½	733	0	449	0	106	235
	8	5	23	460	4	201	0	259	4
	9	3	3½	60	0	22	0	38	0
	10	5	2	43	4	17	0	26	4
	11	3	5	124	8	63	0	61	8
Total		52	124½	124½					
Nisaraya	1	3	14	452	0	388	0	64	0
	2	8	26	843	10	445	0	398	10
	3	4	16	541	12	345	0	196	12
	4	9	13	382	12	261	0	121	12
	5	6	13½	380	4	155	0	175	4
	6	5	4	157	8	136	0	21	8
	7	6	5	91	8	102	0	10	50
	8	4	6	197	0	97	0	100	0
	9	3	2½	85	8	46	0	39	8
Total		48	100	100					

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Vasna	1	5	10	460	0	242	0	218	0	60	278	0	304	-26	0
	2	8	3	657	0	597	0	60	0	270	330	0	714	-384	0
	3	9	16	463	0	413	0	50	0	100	150	0	352	-202	0
	4			251	12	180	0	71	12	80	151	12	186	-34	4
Total		26		<u>83</u>	<u>373</u>	<u>373</u>									
Dehni	1	6	14	347	8	200	0	147	8	160	307	8	351	-43	8
	2	6	17	375	0	268	0	107	0	84	191	0	322	-131	0
	3	8	—			120	0	-120	0	435	315	0	709	-394	0
	4	8	21	650	8	324	0	326	8	120	446	8	433	+13	8
	5	7	25	655	4	447	0	206	4	100	306	4	269	+37	4
	6	7	17	685	12	364	0	321	12	100	421	12	313	+108	12
Total		42		<u>94</u>	<u>94</u>	<u>94</u>									
Naman	1	8	23	789	8	351	0	438	8	120	558	8	268	+290	8
	2	16	26 $\frac{1}{2}$	820	8	575	0	245	8	315	560	8	455	+105	8
	3	5	12	525	0	332	0	-7	0	70	63	0	185	-122	0
	4	13	15	422	0	817	0	105	0	110	215	0	418	-203	0
	5	6	8	214	0	162	0	52	0	95	87	0	198	-111	0
Total		48		<u>84$\frac{1}{2}$</u>	<u>84$\frac{1}{2}$</u>	<u>84$\frac{1}{2}$</u>									
Napa	1	7	11	368	12	254	0	114	12	175	589	12	434	+155	12
	2	10	23	633	8	339	0	294	8	140	434	8	306	+128	8
	3	1	9	302	12	208	0	94	12	10	104	12	149	-44	4
	4	6	7 $\frac{1}{2}$	387	8	184	0	203	8	184	387	8	507	-219	8
	5	3	6 $\frac{1}{2}$	160	0	72	0	88	0	65	153	0	99	+54	0
	6	3	20	451	4	308	0	148	4	80	223	4	170	+53	4
	7	7	23 $\frac{3}{4}$	635	8	359	0	276	8	120	396	8	317	+79	8

Village	No. of Persons in a family	Land tilled	Gross farm income	Cost of production	Dif-ference	In- come extra	Total income	Home expenses	Net surplus 10/-
1	2	3	4	5	6	7	8	9	Rs. As.
8	8	15	514 12	296 0	218 12	210	428 12	217	+211 12
9	12	19½	537 12	458 0	79 12	160	286 12	304	-64 4
Total	57	135½							
Dhobikui									
1	10	36	977 0	640 0	437 0	195	632 0	375	+257 0
2	8	20	682 4	223 0	459 4	165	624 4	236	+388 4
3	7	16	620 0	255 0	365 0	80	594 0	294	+151 0
4	5	11	220 8	124 0	96 8	148	244 8	168	+76 8
5	6	15	587 12	206 0	181 12	95	276 12	488	-211 4
6	5	10	106 8	79 0	27 8	55	62 12	152	-89 8
Total	41	108							
Khadol									
1	4	1	340 0	206 0	134 0	65	199 0	202	-3 0
2	7	12	481 8	203 0	278 8	82	300 8	273	+87 8
3	9	19	620 0	394 0	226 0	220	446 0	674	-228 0
4	4	12	450 4	350 0	80 4	70	150 4	569	-418 12
5	6	24	860 12	237 0	503 12	200	703 12	428	+275 12
6	7	15	482 12	211 0	271 12	75	346 12	340	+6 12
7	7	34	1044 0	520 0	524 0	600	1124 0	266	+858 0
8	3	167	2	183 0	15 14	140	124 2	117	+7 2
9	6	418	8	257 0	161 8	124	285	251	+34 8

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Village 1	No. of persons in a family 2	Land tilled 3	Gross farm income 4	Cost of production 5	Dif- ference 6	In- come extra 7	Total income 8	Home expenses 9	Net surplus 10	Rs. As.				
Anklav	10	30	781	8	389	392	8	140	532	8	461	+71	8	
	6	16	454	0	247	207	0	100	307	0	296	+11	0	
	9	28	915	12	473	442	12	240	682	12	248	+434	12	
	7	20	814	8	383	431	8	80	511	8	297	+214	8	
	11	44	1187	0	500	687	0	270	957	0	494	+463	0	
	8	15	459	0	274	185	0	190	375	0	245	+180	0	
	15	35	1125	8	445	680	8	80	760	8	571	+389	8	
	7	21	719	8	367	362	8	190	542	8	180	+862	8	
	6	12 ¹	368	8	244	124	8	90	214	8	149	+65	8	
	7	92	1004	0	419	585	0	120	705	0	816	+389	0	
	7	24	713	8	257	456	8	78	534	8	247	+287	8	
	9	29 ¹	820	0	335	485	0	65	550	0	265	+285	0	
	9	7	178	0	93	85	0	230	315	0	701	+386	0	
	17	38	1266	8	600	666	8	350	1016	8	394	+622	8	
Total	128	351 ²												
Bodal	1	7	7	286	12	102	184	12	95	279	12	199	+80	12
	2	11	27 ³	758	0	457	296	0	220	516	0	507	+9	0
	4	—	—	—	—	118	118	0	230	112	0	181	-69	0
	6	18	376	0	359	37	0	321	358	0	378	-15	0	
	5	4	228	0	262	34	0	47	40	0	143	-103	0	

GROUP II

Village 1	Number of persons in a family 2	Land tilled 3	Gross farm income 4	Cost of production 5	Dif- ference 6	In- come extra 7	Total income 8	Home expenses 9	Net surplus 10	Rs, As. Rs, As.
Sunay	1	2	7	267	0	132	0	—	135	0
	2	11	20	432	0	940	0	50	142	0
	3	7	9	277	12	137	0	140	12	35
	4	5	16½	528	12	323	0	205	12	90
	5	6	8	601	0	205	0	96	0	106
	6	4	5	156	4	82	0	72	0	50
	Total	35	65½	217	0	137	0	80	0	100
Palaj	1	3	7½	292	0	141	0	91	0	95
	2	4	7½	184	12	61	0	123	12	50
	3	3	5½	212	8	120	0	92	8	100
	4	6	4	24½	—	—	—	—	—	—
	Total	16	24½	228	8	178	0	50	8	40
Pandoli	1	5	10	120	8	142	0	22	8	54
	2	4	8	659	8	426	0	253	8	100
	3	4	21	11	210	4	148	0	64	4
	4	9	8½	162	0	160	0	2	0	59
	5	4	5	15	360	8	280	0	110	8
	Total	29	73½	—	—	—	—	—	—	—

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Amod	11	28	1264	8	867	897	8	425	822	8	363	459	8	
	9	32	873	4	520	859	4	170	523	4	497	+26	4	
	3	15	429	8	204	225	8	60	285	8	817	-31	8	
	7	21	803	0	444	359	0	210	569	0	382	+187	0	
Total	30	96	12											
Virsad	1	9	8	177	4	396	-218	12	568	249	4	415	-65	12
	2	4	7	154	4	140	10	4	171	181	4	185	-3	12
	3	12	4½	79	4	65	14	4	145	159	4	532	-372	12
	4	4	7	217	0	152	65	0	95	100	0	170	-70	0
	5	4	6	114	8	88	26	8	55	81	8	275	-193	8
	6	6	10	255	0	222	98	0	241	274	0	342	-68	0
	7	6	6	168	8	140	28	8	250	278	8	243	+35	8
	8	12	11	171	0	196	-25	0	188	163	0	506	-343	0
	9	4	2	56	4	83	-26	12	203	176	4	270	-93	12
	10	14	22	486	12	279	157	12	192	349	12	345	+14	12
	11	9	25	559	4	392	161	4	103	264	4	182	+192	4
	12	6	7½	184	8	87	97	8	150	247	8	562	-314	8
Total	90	116												
Ashi	1	5	9	286	8	141	145	8	88	238	8	279	-45	8
	2	6	30	810	8	459	851	8	145	496	8	281	+216	8
	3	20	40	1451	12	845	606	12	380	986	12	915	+71	12
	4	4	5½	172	8	107	65	8	102	167	8	364	-196	8
	5	6	19	474	12	258	216	12	265	481	12	360	+121	12
	6	14	37½	977	4	602	375	4	205	580	4	565	+15	4
Total	55	151												
Pimplav	1	6	7½	236	0	147	89	0	199	288	0	241	+47	0
	2	7	7	179	4	104	75	4	51	126	4	275	-146	12

Village	No. of persons in a family	Land tilled	Gross farm-income	Cost of production	Difference	Income extra.	Total income	Home expenses	Net surplus
		Bighas	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.
			5	6	7	8	9	10	
3	7	27	938 8	565 0	373 8	88	461 8	301	+160 8
4	10	22	542 8	350 0	192 8	113	305 8	435	-129 8
5	7	3	111 0	165 0	-54 0	0	297	243 0	-377 0
6	3	11	226 4	134 0	92 4	45	137 4	914	-176 12
7	5	6	200 8	83 0	117 8	158	275 8	504	-28 8
Total	45		632 2						
Iasnaw	1	2	4	83 0	129 0	-46 0	177	131 0	-129 0
	2	7	16	294 12	237 0	57 12	60	117 12	-333 4
	3	12	20½	398 4	253 0	145 4	242	387 5	-98 12
	4	5	2	73 8	60 0	13 8	193	206 8	-29 8
	5	2	3	47 4	81 0	-33 12	45	11 4	-197 12
	6	6	10	233 4	220 0	13 4	188	201 5	-58 12
Total	34		553 2						
Virol	1	6	7½	168 12	135 0	33 12	110	143 12	-173 4
	2	4	5	176 8	87 0	89 8	100	189 8	-172 8
	3	6	13	443 12	218 0	225 12	115	340 12	+54 12
	4	3	14	287 4	150 0	137 4	100	237 4	+75 4
	5	5	10½	203 12	132 0	71 12	30	101 12	-56 4
	6	8	12	317 12	210 0	107 12	95	202 12	+15 12
	7	7	4	135 4	101 0	34 4	66	100 4	-65 12.
Total	39		66						

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GROUP III

Village	No. of persons in a family	Land tilled	Gross farm-income	Cost of production	Dif-ference	In- come extra	Total income	Home expenses	Net surplus
	2	3	4	5	6	7	8	9	10
		Bighas	Rs. As.	Rs. As.	Rs. As.	Rs.	Rs. As.	Rs.	Rs. As.
Amiad	1	7	10	186 8	140	46 8	110	156 8	177 —20 8
	2	4	12 $\frac{1}{2}$	144 8	103	41 8	35	76 8	149 —72 8
	3	2	12	270 0	193	77 0	45	122 0	107 +15 0
	4	3	9	220 0	213	7 0	13	20 0	200 —180 0
	5	9	12 $\frac{1}{2}$	213 4	130	83 4	113	194 4	159 +35 4
	6	6	12 $\frac{1}{2}$	211 12	85	126 12	48	78 12	129 —50 4
	7	8	11 $\frac{1}{2}$	192 6	131	61 6	74	135 6	145 —9 10
	8	4	13	171 10	93	78 10	68	148 10	142 +6 10
	9	6	4 $\frac{1}{2}$	150 0	87	63 0	78	141 0	116 +25 0
	10	8	3 $\frac{1}{2}$	510 8	167	343 8	90	433 8	235 +198 8
Total	57		132 $\frac{1}{2}$						
Sankhiad	1	6	6	90 0	54	36 0	60	96 0	184 —88 0
	2	3	3 $\frac{1}{2}$	48 8	27	21 8	60	81 8	89 —7 8
	3	6	4	68 4	72	3 12	100	96 4	148 —51 12
	4	5	9	117 4	142	—24 12	60	35 4	167 —131 12
	5	3	4 $\frac{1}{2}$	108 12	52	52 0	47	103 12	127 —23 4
	6	4	4	52 4	65	—12 12	30	17 4	121 —103 12
	7	5	9	162 12	159	3 12	65	68 12	165 —96 4
	8	5	9	220 2	120	8	99 10	65	164 10 +8 10,
Total	37		49						

Kanwadi 1	5	5	145	90	12	102	192	12	235
2	10	0	94	68	0	60	128	0	135
3	5	8	223	210	13	8	133	146	8
4	4	9	124	71	53	12	130	183	12
5	5	3	53	10	34	10	37	71	10
6	6	8	132	0	92	0	64	156	0
7	7	4	113	12	31	82	12	146	12
8	8	9	17	230	0	234	-4	92	88
9	9	4	2	42	12	30	12	84	96
10	15	16	423	0	252	0	171	0	115
11	11	3	10	215	0	185	80	0	250
12	12	4	8	131	4	92	39	4	55
13	13	5	5	130	0	80	50	0	68
14	14	5	20	403	8	205	198	8	120
Total			82	139					
Hathipura 1	3	3	4	42	12	73	-30	4	70
2	3	3	56	8	22	34	8	5	39
3	7	15	212	5	164	57	4	94	151
4	8	17	273	8	191	82	8	185	267
5	5	3	42	0	71	-29	0	94	65
6	6	3	51	0	20	8	30	8	55
7	7	4	306	4	127	179	4	35	214
8	8	4	5	73	0	107	-34	0	103
9	9	5	2	35	8	7	28	8	15
10	10	4	5	67	12	49	18	12	90
11	11	5	5	48	8	90	-41	8	95
Total			49	76					

Village	No. of persons in a family	Land tilled	Gross farm-income	Cost of production	Dif-ference	In- come extra	Total income	Home expenses	Net surplus
1	2	3	4	5	6	7	8	9	10
Asarna	5	7	203 4	168	35 4	78	113 4	111	+2 4
	6	4	81 0	62	19 0	50	69 0	107	-38 0
	7	8	180 4	89	91 4	-	91 4	131	-39 12
	8	4	92 0	65	27 0	133	160 0	202	-42 0
	9	8	136 8	105	31 8	62	93 8	198	-102 8
	10	6	51 2	71 4	63 8	4 85	93 4	213	-119 12
	11	6	25 2	219 0	248 -29	0 0	125 96	0 0	241 -145 0
	12	2	4	89 4	54 35	4 42	79 4	83 83	-5 12
	13	7	6	142 12	92 50	12 12	110 160	12 12	175 -14 4
	14	4	3 1	81 0	27 54	0 0	75 129	0 0	114 +15 0
	15	6	8 2	209 4	99 110	4 4	53 163	4 4	172 -8 12
	16	6	3	37 8	28 9	8 8	57 66	8 8	116 -49 8
	17	6	3	44 8	14 30	8 8	45 75	8 8	158 -82 8
Total		79	89 1						

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